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ABSTRACT

The master plan for evaluation presented in this report was developed by a UNESCO consultant as part of an agreement between the Government of Thailand and the United Nations Development Program for a project providing technical assistance for strengthening educational radio for schools and out-of-school education. Although this plan is restricted to the activities of the Centre for Educational Technology (CET), the Radio Correspondence Project (RCP), and the In-Service Teacher Training Division (ITD), brief descriptions of the activities of other sectors using the radio facilities provided under this education project are included. Formative and summative evaluation procedures proposed are based on a study of the educational radio for school and out-of-school project in its context, and an assessment of the available resources for the evaluation of the project. This report concentrates primarily on recommending detailed sets of procedures for the evaluation of the in-school sector, and a broader and less detailed framework for the evaluation in the other sectors. A summary of the recommendations and a list of references conclude the report, and appendices provide background information on the project, including a detailed work evaluation plan for CET and an outline of project phasing, job descriptions, and terms of reference for foreign consultants. (Author/JEG)

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A Master plan for the Evaluation of the Radio Component of the Fifth Education Project for the Royal Government of Thailand

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The mission was organised by UNESCO, the executing agency for UNDP technical assistance to the fifth education project of the Ministry of Education, Thailand.

Dr. Bates' mission was carried out during leave from the Open University.

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1. INTRODUCTION

This study has been carried out as part of the agreement between the Government of Thailand and the United Nations Development Programme for a project providing technical assistance for strengthening educational radio for schools and out-of-school education.[1] The Thai Government has negotiated a loan from the World Bank for a fifth education project, which has as one component the development of educational broadcasting. The loan agreement lays particular stress on the need for both formative and summative evaluation of the various projects. In particular, the Government gave assurances that:

> "it would submit for Association comment, by December 31, 1979, procedures for testing and revising in-school radio programs and for monitoring classroom use of the programs and thereafter make adjustments necessary to improve program effectiveness." (para. 2.18)[2]

and that:

> "it would submit to the Association the National Education Commission's mid-term and final evaluations of project components with comments from the National Economic and Social Development Board and educational agencies involved, by December 31, 1982 and June 30, 1986, respectively." (para. 2.41)[2]

The Thai Government and UNDP have agreed a programme of technical assistance for the radio component of the fifth education project. This includes provision for foreign consultancy for assistance with evaluation, including funding for expenditure prior to 1980. UNESCO is the executing agency for this UNDP technical assistance, and as part of this programme, UNESCO arranged for a consultant to travel to Bangkok in October/ November 1979, to:

1. study the educational radio for school and out-of-school project in its context and assess the available resources for the evaluation of the project;

2. draw up a master plan for monitoring, testing and evaluating

the whole project in consultation with the staff of the Centre for Educational Technology and other agencies likely to be involved in various stages of evaluation;

3. make detailed recommendations regarding methods of evaluation to be adopted, manpower and other resources needed;

4. make detailed recommendations regarding technical assistance, specifying posts, terms of reference and time schedule.

This is the report resulting from that mission.

It can be seen from the assurances given to the World Bank that the most urgent task is to agree procedures for the formative evaluation of the in-school radio programmes. At the same time, it is obviously desirable to ensure that such procedures are consistent with any overall plans for evaluation, both formative and summative. Thus this report concentrates primarily on recommending sets of procedures in detail for the evaluation of the in-school sector, and a broader and less detailed framework for evaluation in the other sectors, given the necessarily limited time-scale (six weeks) of the mission.

In drawing up this plan for evaluation, I have been aware of the need to ensure flexibility. While I have six weeks in which to draw up a master plan, there is 22 months of consultancy time available for evaluation design and implementation, for a project extending over six years. At the time of writing, the time-scale for the building of the new CET production centre is not yet definite, and plans will of necessity have to be under constant revision for all aspects of the project. However, the Centre for Educational Technology is anxious that evaluation activities should not be held back until the new studios and the national educational radio network are completed, but should begin as soon as possible. Such a policy also makes sense with regard to a master plan for evaluation, since this allows for comparisons between the situation both before and after the introduction of the new service.

2. THE RADIO COMPONENT OF THE FIFTH EDUCATION PROJECT

The radio component covers a number of different sectors, but the following master plan for evaluation is restricted to those areas covered by the agreement between the Royal Thai government and UNDP, with regards to technical assistance for strengthening educational radio for school and out-of-school education, namely, the activities of the Centre for Educational Technology (CET), the Radio Correspondence Project (RCP), and the In-Service Teacher Training Division (TTD), all located in the Ministry of Education.

Nevertheless, the summative evaluation procedures will need to take into consideration activities in other sectors using the radio facilities provided under the fifth education project[3], so it is necessary therefore to describe briefly the responsibilities of all the sectors concerned, and their evaluation plans to date.

The Main Project

The project will provide new accommodation and production facilities for CET. CET will produce programmes for in-school use, and share its production facilities with RCP and TTD.

The project will also provide resources for the construction of a national educational radio network (NERN). The Public Relations Department (PRD) will be responsible for the technical operation of the new network, but there will be a Programming Board, representing PRD and the various educational agencies using the network. It is anticipated the new network will be ready in mid 1983.

The new network will be used not only by those producing programmes within the Ministry of Education (CET, RCP and TTD), but also by the newly planned Thai Open University - Sukhothai-Thammathirat University (STU) - and by other development agencies, such as the Ministry of Agriculture, or the Ministry of Public Health. Thus the output of the new network, when fully operational, is expected to be:

Organisation	Type of programming	Hours per week
CET	in-school	25
RCP	non-formal	20
TTD	in-service teacher training	12
STU	open university	50
Other agencies	development programmes	10
Total		117

The responsibilities and evaluation plans of each of the sectors are as follows:

CET

CET is responsible for a number of different activities:

i. in-school radio for enrichment. According to the fifth education project, CET is expected to produce 59 programs a week. These programmes are intended to support the introduction of a new national curriculum. Currently, the programmes are aimed at enriching and reinforcing the activities of teachers, and have not been used to date for direct teaching. Some limited evaluation activities have been carried out, such as a recent general survey of the use of in-school broadcasts, and one member of staff is responsible for evaluation activities, but not on a full-time basis, having other responsibilities as well. Producers have an average production load of about 36-40 programmes a year (see Appendix 4).

Basic Skills Pilot Project (BSPP). In order to test the possibilities of a more effective use of educational radio broadcasts, CET is carrying out an experimental programme of intensive, direct teaching by radio and print to provide basic skills in mathematics for second-grade primary school children. This project, which is being modelled on the Nicaraguan Radio Mathematics Project, is receiving technical assistance from the Institute for Mathematical Studies in the Social Sciences (IMSSS) at Stanford University, USA, assisted by funding from USAID. The Nicaraguan material is being adapted, with the assistance of the Thai National Curriculum Development Centre, to match the new Thai mathematics curriculum. If the experiment is successful, the project will be extended to other grades and other subject areas. Formative and summative evaluation procedures are built into the project.[4] A staff member of IMSSS, Dr. Klaus Galda, is providing guidance on the evaluation procedures, which include classroom observation, possibly some mathematics achievement tests, and teacher evaluation sheets. The design requires, for formative evaluation, the field-testing of programmes, followed by modification to new programmes under production, as a result of the field testing, and, for summative evaluation, matched experimental and control groups. The field-testing of the first batch of programmes begins in January, 1980, and the final versions of the programmes are planned for transmission in the Bangkok area and in an area in north-east Thailand during the 1981 school year. There are altogether about 160 programmes planned in this series, of which about 40 to 60 will be directly observed. The number of classrooms to be used for evaluation purposes is as follows:

	Radio teaching	Control
Field tests	12	0
Formative evaluation	24	0
Summative evaluation	32	32

Six visits, totalling at least 14 weeks, by IMSSS staff, are planned, as follows:

August, 1979	2 weeks	Planning
January, 1980	4 weeks	Field tests
May/June, 1980	4 weeks	Pre-tests; observe first broadcasts
Aug/Sept, 1980	2 weeks (?)	Check on progress of project
February, 1981	2 weeks (?)	Post-tests; teacher evaluation sheets
June,1981	4 weeks (?)	Write report

Quantitative data will be key-punched in Thailand, but data processing and data analysis will be carried out at Stanford. CET has agreed to provide the necessary manpower from its own staffing, with assistance from local supervisory staff, to carry out the necessary field-work and other activities associated with the evaluation. No firm estimate of this was made in the IMSSS proposal, but it seems likely that evaluation activities will require the equivalent of at least one man-year of CET staff time. In practice, this means that without further staffing the one CET staff member currently responsible for evaluation activities would be mainly committed to working on the BSPP project during 1980.

iii. other audio-visual media Within CET, there is a section responsible for the design, production and distribution of audio visual media other than broadcasts. With the phased development of the new curriculum, other media have been built into the new curriculum. The other media section currently produces each year for use in schools one or two short 16 mm. films, slides, filmstrips, transparencies, charts, still pictures, and dioramas. It also produces non-broadcast audio-cassettes. Sometimes these materials are produced in direct support of the radio programmes. Other times they are produced independently of the radio programmes, in support of the new curriculum. Material is also produced for out-of-school use, particularly in support of development programmes (eg. functional literacy, population education.) The other media section also provides a loan service for equipment (slide and filmstrip projectors, etc.), for materials produced by CET (audio tapes, slides, etc.), and for commercial materials (16 mm. films, etc.). The other media section also provides an audio-cassette copying service of the school radio broadcasts. Except for the loan service,

schools must provide the stock (unprocessed film-strip, blank audio tapes), but the copying or processing is done without charge to the schools. The other media section keeps an accurate record of demand for and supply of its material , but has no information about its actual use. Although there is a system of formative evaluation for the new curriculum, apparently the effectiveness of individual components other than the print material is not assessed. It is the wish of CET that the evaluation procedures should extend to the work of the other media section.

The detailed plans for evaluation being drawn up in this report are restricted to the above three areas of activity: in-school programmes for enrichment purposes; the basic skills pilot project; and the other media section of CET.

iv. The General Educational Broadcast Section The Ministry of Education operates its own radio station, serving the Bangkok area and neighbouring provinces. During the school day , it currently transmits school broadcasts, but in addition, it also transmits seven hours a day of general educational programmes, which are also produced by CET. When the new radio network is operational, all schools broadcasts will be transferred to the new network, but the Ministry of Education station will extend its daily transmission of general educational broadcasts to ten hours a day. Compared to programmmes for schools, these programmes are of greater variety and sophistication as regards production techniques. There are, for example, full length radio drama as well as concerts and recitals of both Thai and Western music, and a great deal of outside interviewing. Very limited studies of the audience for these programmes have been carried out, and only on an ad hoc basis. It is the wish of the CET that the general educational broadcast section should be included in any master plan for evaluation.

v. Educational Television Section This section, also within CET, produces 2½ hours a week of programming for transmission in the Bangkok area for out-of-school children and adults, using the

production facilities of a commercial station. There are no plans to include this section within the master evaluation plan.

The UNDP/Thai government agreement assigns to CET resources for 6 man months foreign consultancy for formative evaluation, 8 man months for summative evaluation, and a Thai national specialist in research and evaluation for 12 months.

RCP

The Radio Correspondence Project is concerned with serving out-of-school youths and adults who have had little or no access to formal education. Currently, radio programmes for RCP's projects are produced by RCP staff at regional centres, and broadcast from local stations in the regions. Under the fifth education project, programmes for the four regions will be produced in the new studios at the regional centres and PRD stations close to the regional centres. The programmes would be broadcast on the new educational radio network. The RCP project covers three main courses:

i. functional literacy Adults who wish to follow a functional literacy course by radio correspondence are organized into local groups of 15, and receive 72 hours of radio programmes, 56 hours of group activities, and 72 hours with organizers. The students receive a handbook and radio programme schedule.

ii. interest groups Courses are offered for any group of people who wish to study further in areas related to development. Students study the manuals, listen to the related radio programmes, and attend a local listening group. Two programmes a week per course are planned.

iii. functional continuing education These courses are planned at two levels. Level 3 is equivalent to the six years primary school programming, and Level 4 is equivalent to the lower secondary stage. Students pay an enrolment fee and receive a learning manual, reference

materials, and a radio programme schedule. A student will attend a group meeting once week. There will be six half hour programmes a week for each student, each programme being broadcast twice.

The RCP programme as a whole has evaluation built into it, and plans for formative evaluation activities are the responsibility of RCP.

The UNDP/Thai Government agreement assigns to RCP resources for 5 months foreign consultancy for formative evaluation, and 3 months for summative evaluation.

TTD

In-service teacher training through radio will aim at a large (400,000) and widespread audience, and is expected to become the main medium for such training. TTD will be responsible for preparing programmes (and printed support materials) which will be produced at CET's new studios, and broadcast on the new network. In-service teacher training covers three areas :

i. the Certificate in Education There are currently 46,000 unqualified teachers who require upgrading to the basic qualification of the Certificate in Education. This programme will require 124 hours radio time throughout the year.

ii. the Secondary Grade Teacher Certificate There are currently 83,000 lower qualified teachers who require upgrading to this level. The programme will require 146 hours radio time throughout the year.

iii. General Up-Dating It is planned to transmit a further 120 hours a year for the general up-dating of teachers, in particular for supporting the introduction of the new curriculum.

The fifth education project includes a proposal for the appointment of five evaluation staff for the in-service teacher training programme, which has responsibility for formative evaluation in its own area.

The UNDP/Thai Government agreement does not include any allocation of resources for foreign experts in evaluation specifically to the radio component of in-service teacher training.

STU

The Sukhothai-Thammathirat University is under the administration of the Office of University Affairs, and its fiscal appropriation is independent of the World Bank/Thai Government loan agreement. However, STU will be using approximately 50 hours a week transmission time on the new network and will be responsible for its own radio production. Formative evaluation is the responsibiiity of STU.

Other Government Agencies

Government agencies such as the Ministries of Agriculture and Public Health will provide programmes from their own resources to support on-going regional extension efforts. They will also be responsible for their own formative evaluation.

The National Education Commission (NEC)

Whereas each of the various projects covered by the fifth education project is required to provide formative evaluation procedures, the Thai Government has, as a condition of the loan agreement, made NEC formally responsible for mid-term and final summative evaluation. In order to make summative evaluation judgements about the investment made in the radio component, one should take into consideration the use made of the facilities provided through the loan agreement by all agencies. The "spin off" or

additional benefit derived from a system which allows for multiple use can make significant differences to the cost-effectiveness of a system.

The following table therefore summarises the relevance of this report, and the limits of the proposed framework, with regard to the various agencies and sectors covered by the radio component of the fifth education project.

Formative evaluation		Summative evaluation
Detailed proposals	Outline proposals	Outline proposals
CET: in-school radio (general) in-school radio (BSPP) other media	CET: general educational broadcasting RCP TTD	CET RCP TTD STU Other development ministries NEC

3. AN EVALUATION PLAN FOR IN-SCHOOL RADIO

Evaluation Tasks

CET has been aware for some time of the need to strengthen its evaluation procedures, and the World Bank has specifically stated the need for testing and revising in-school programmes, and for monitoring classroom use.

However, CET is currently not staffed adequately to carry out such activities. There is only one person available to work on evaluation activities, and even then not on a full-time basis, and CET is already committed to providing substantial manpower to assist with the evaluation of the basic skills pilot project during 1980 and 1981.

It is clear then that if evaluation activities are to be carried out adequately, the creation of an evaluation unit within CET will be necessary. The size of the unit will depend partly on the range of tasks to be carried out, partly on the resources available, and partly on the need to strike a balance between production and evaluation activities.

A CET evaluation unit would have three main objectives:

1. to provide CET management with information on the overall performance of in-school radio, for planning and development purposes;

2. to provide production staff (producers and script-writers) with an assessment of the effectiveness of their programmes, with the aim of improving the use of radio education in schools;

3. to provide base-line data on CET's activities for summative evaluation purposes.

Table 1 (over) summarises a range of evaluation activities that could be usefully undertaken by a CET evaluation unit. The first column lists activities concerned with the effectiveness of the distribution system. This is crucially important, because if, for instance, a large proportion of the radio receivers in schools are not working, the quality of the programmes themselves becomes irrelevant, since few schools will be able to receive them.

The second column lists activities concerned with educational and production decisions. The first set of activities is concerned with identifying or specifying more precisely the educational objectives of CET. A distinction is made between the objectives of the Thai educational system as a whole, the objectives for in-school radio, and the objectives for individual series or programmes. Often, these objectives will have already been spelt out, although perhaps in rather vague or general terms. The evaluator's task is to determine more precisely stated objectives where these already exist, and to press for clearer specification of objectives, when they do not already exist. In particular, the evaluators will be seeking ways of expressing objectives so that it is possible to know whether or not the objectives have been achieved. (This is not an end in itself, of course, but a necessary first step in judging effectiveness.)

The second set of activities in the second column is concerned with measuring the effectiveness of the radio programmes and other media produced in CET, in such a way that the results lead to improvements in the quality of the programmes produced by CET. In other words, it is not enough to know whether or not the programmes were successful, in terms of achieving their objectives. The aim here is to find out how programmes could be improved, if necessary. Listed are several ways in which this might be done. These will be discussed in more detail later.

The third set of activities in the second column is concerned

TABLE 1

TASKS FOR AN IN-SERVICE EVALUATION TEAM

Formative

Formative → Summative

Level 1 (Distribution)	Level 2 (Production/educational)	Level 3 (System effectiveness)
1. No. of working sets in schools.	1. Identification of objectives:	1. Overall learning gains directly attributable to radio
2. Clarity of reception	a. general objectives of Thai education system	2. Listening/rating figures on national basis
3. Adequacy of publicity	b. objectives for in-school radio as a whole	3. Analysis of costs of various sectors
4. Adequacy of delivery of manuals	c. objectives for individual series or programmes	4. Level of output per annum
5. Adequacy of delivery of other media	2. Assessment of effectiveness of radio and other media	5. Work-load on producer
	a. analysis of content	6. Use of production facilities
	b. testing of teaching effectiveness	7. Analysis of difficulties encountered
	c. analysis of teacher/class use of media	8. New uses or untapped potential
	d. analysis of teacher/class reaction to media	9. Specialist opinion
	e. relevance to teachers' needs/new curriculum	
	f. adequacy of support materials	
	3. Development and testing of new approaches to use of radio (format, style, production methods)	
	4. Quality and coverage of training teachers to use media	

with the development of new approaches to programme-making. The previous paragraph was related to evaluation of existing policies and styles; when though new approaches, in format, aims or style, are being considered, one task of the evaluation unit would be to assist in the collection of feedback data on such new approaches. The BSPP is a good example of such a development, and how an evaluation unit could help in the development and assessment of new policies.

Lastly, in the second column, is the task of assessing the quality and coverage of the training of teachers in the use of educational media.

The third column is more concerned with assessing the effectiveness of the in-school radio service as a whole, rather than with individual parts of it. In these areas of activity, the evaluation unit would be concerned with the extent of use of schools radio, as measured by national listening figures, the overall effectiveness of the programmes, as measured by performance tests or teacher ratings, and the cost of various sectors of the service. These would be set against the overall output of the service, the use of technical facilities, and the work-load on producers. Finally, included in these activities would be efforts to measure or describe the difficulties encountered by CET in maximising the potential of the service, and new ways as yet untried by which the service might be improved.

These last sets of activities can be seen as having both a formative and a summative evaluation role. These activities are formative, in that they assist the management of CET to assess comparative areas of weakness within the system, year by year, so that special attention can be paid to strengthening these weaker areas. They also have a summative evaluation role, in that they permit a broad overview, on a more or less representative basis, of the work of the in-school radio service as a whole.

It can be seen that while the list of evaluation tasks includes the monitoring, testing and revising of programmes, the range of evaluation activities that can be useful to an in-school radio system is much wider. To carry out all the activities listed across all programme areas and in all schools of course would not be practical, without a very large unit which would not only be expensive to run, but would also be out of balance with the production side. Consequently, priorities must be set for evaluation activities, as in any other area. Nevertheless, a permanent, in-service evaluation unit needs to be sufficiently flexible to respond to changing needs, and to do this, an awareness of the wide range of evaluation activities that can be undertaken is necessary.

Staffing an Evaluation Unit in CET

What should be the size of such an in-house evaluation unit? To decide this, a number of factors need to be taken into account. First of all, it is important to maintain a balance between production and evaluation. While the World Bank loan will ease the situation somewhat, it will still be difficult to recruit all the staff required for CET's expanded activities. At the time of writing, CET is still discussing how many producers it can realistically expect for in-school radio production when the fifth education project is fully operational. A large demand for evaluation manpower may well result in fewer new posts for production.However, a realistic estimate from the Director of CET is that there will need to be a minimum of 20 producers in the in-school section, when the new system is fully operational.

It would seem then that a total of five full-time posts for evaluation (one already existing, plus four new posts) would be a reasonable target size for the evaluation unit. A team of five is sufficiently large to carry out enough evaluation activities to make an impact, while being small enough not to imbalance the distribution of staff between production and evaluation.

However, there are constraints which markedly affect the speed with which such posts can be filled. It is particularly difficult to obtain established posts for evaluators within CET, because each department in the Ministry of Education already has its own planning and research unit, and there is naturally pressure on CET to use these already existing resources, rather than create new positions. It is clear that these existing units would not be able to cope with either the nature nor the urgency of the evaluation activities required of CET without themselves being subjected to major changes and expansion. Nevertheless, the existence of such research units does make it more difficult for CET to argue for its own evaluators.

Secondly, the new studio complex will not be ready until late 1981, at the earliest. Until then, CET will be very short of office space. Furthermore, the recent re-organisation within the Ministry of Education which led to CET moving from the Department of Educational Techniques to the Department of Non-Formal Education has resulted in administrative delays in approving CET's request for 51 additional staff for the fiscal year 1979/80. It now seems that these posts will not be available for appointment much before the end of 1980, and that there will be a knock-on effect delaying appointments for the fiscal year 1980/81. Consequently, any posts for evaluators requested in the 1980/81 financial year are unlikely to be filled before 1981.

In order to press forward with evaluation activities in 1980, the Director of CET is requesting a temporary, 12-month appointment of an evaluator from the Civil Service Commission's reserve list. It is possible that this post might be filled from January 1st, 1980.

In addition, the UNDP/Thai Government agreement on technical assistance for the project provides for the appointment of a

Thai national specialist in research and evaluation for 12 months, the recommended starting date being July, 1980. However, since the school year begins in May/June, I recommend that this appointment should be made from April 1st, 1980. There is some doubt whether an appropriate person can be found under such an arrangement, but given the impossibility of appointing additional permanent evaluation staff in 1980, such an appointment would enable a much more satisfactory plan for evaluation activities, in not only 1980, but 1981 also, as we shall see.

With regard to permanent staff, I recommend that three evaluators should be requested for the fiscal year 1980/81, for appointment as soon as possible. This seems to be the maximum that can be asked for in this year, considering that CET must also request a large number of producers in the same year. The earliest possible date for these appointments to begin is October 1st, 1980, but a more realistic date is probably January 1st, 1981. However, any delay in appointment beyond January, 1981, will make it difficult to plan and co-ordinate activities for the 1981/82 school year, and to provide these evaluators with the necessary on-the-job training. If these permanent appointments are delayed beyond April 1st, 1981, it will be extremely unlikely that the World Bank requirement for an adequate system of monitoring, testing and revising in-school programmes could be considered to have been met by the time of the mid-term summative evaluation of the project. In particular, delay in appointments beyond April 1st, 1981 will seriously jeopardise the design of an adequate summative evaluation programme for in-school radio, and could only be compensated for by increasing substantially the work of NEC and incurring substantial increased expenditure for summative evaluation of in-school programmes (see "Summative Evaluation" below).

It is recommended that one additional permanent evaluator should be appointed, for in-school evaluation purposes, from the budget for the fiscal year 1981/82, to begin appointment as soon as possible.

CET plans to use the existing post currently devoted to evaluation activities for the post of Head of Evaluation. The remaining four posts will be filled by recently graduated masters degree students who have specialised in evaluation techniques. These new recruits will receive on-the-job training, from the Head of Evaluation, the Thai national specialist in research and evaluation, and from foreign consultants. One of the four posts should be filled by the temporary evaluator to be appointed for 1980.

Table 2 below summarises recommended Thai staffing of the evaluation unit:

Table 2: Recommended Staffing for In-School Evaluation Unit

	In post by:		
Staff	Ideally	Realistically	No later than
Head of Evaluation	———	Already in post	———
Evaluator (1) (temp.)	January 1980	January 1980	April 1980
Thai specialist (UNDP)	April 1980	April 1980	July 1980
Evaluators (3)	October 1980	January 1981	April 1981
Evaluator (1)	October 1981	January 1982	April 1982

Policy for In-School Radio

Evaluation can be used in two ways. It can take existing policy as given, and try to find ways of effectively implementing that policy; or it can provide information which can assist the development of alternative policies. Before going on to propose specific evaluation activities for 1980 and 1981, then, it is necessary to discuss briefly policy matters regarding the use of in-school radio.

Up to now, CET's policy for school radio has been to support the national curriculum. This has of necessity had to be a rather weak form of support, often termed "enrichment". When the national curriculum is being designed, radio is deliberately not integrated into the curriculum, because a large proportion of schools (80% in 1973) do not have radio sets, or cannot receive programmes, being beyond the current transmission area. So, when designing radio programmes CET has had to take the existing curriculum as given, and add to this the radio programmes. Since the curriculum was designed in any case without radio in mind, it follows that the objectives of the curriculum are expected to be achieved whether or not radio is used. If radio is therefore used for introducing new material, this will be seen by the teachers as peripheral or ancillary to the main objectives of the curriculum. Radio can only reinforce what is already covered in the curriculum.

From 1980, however, CET is experimenting with a policy of direct teaching by radio. The success or otherwise of this use is the subject of the BSPP evaluation, but it is already clear that there may be problems in applying this policy across all in-school programming on a national basis. First of all, it supposes a major shift in educational policy, fundamentally changing the role of the teacher, and making radio the primary medium of teaching. No matter how effective such a policy may be in terms of learning gain, there may be objections in principle to such a policy. Secondly, the amount of radio required to cover the curriculum is greater than the transmission time available. BSPP requires 160 programmes a year to cover one grade in one subject. Thus, even if direct teaching by radio does prove to be successful, it will have to be used selectively.

A third policy would be to integrate radio into the curriculum, using it selectively as one of several media. Once the national educational radio network is operational, and nearly all schools are issued with radio sets as part of the fifth education project, such a

policy becomes feasible. The new network should be fully operational by mid-1983. Although the new curriculum will already have been designed for the first five grades by then (without including radio), radio could be integrated into the new curriculum from grade six upwards. (Indeed, it could even be integrated into grade 5, if one was prepared for some areas of the country to manage without the radio component for one year.)

A particular problem for evaluation is the question of measuring the achievement of objectives for each of the three policies, since the objectives of each policy are different.

The immediate aim behind enrichment is to increase motivation, provide variety, and add interest. It is hoped that this will lead eventually to increased learning gains, or reduced drop-out. However, radio is only one out of many factors which cumulatively are likely to influence whether pupils learn or drop-out, and tracing the direct impact of radio on learning gains or drop-out, when radio is used for enrichment purposes, is in practice very difficult. Thus the main measures of success for this use tend to be the subjective reaction of teachers and learners.

Direct teaching on the other hand appears much easier to evaluate, since its immediate purpose is an increase in learning performance, and radio is given the major role in achieving this objective. Therefore, in any comparison between the use of radio for direct teaching and enrichment, it would be curious if the former was not more "successful" if the sole criterion was to be learning gains. Direct teaching on a priori grounds therefore would seem to have advantages over enrichment, if learning gains are the main objective.

However, the choice is not really between direct teaching and enrichment. To use radio for direct teaching as part of the national curriculum requires radio to be available in nearly all schools. If

that provision is made, then the use of radio as part of an integrated curriculum, in which the teacher organises a wide range of media (books, radio, charts, "real things" like local plants, leaves, insects, etc., the blackboard, and the teacher himself) also becomes possible. Thus the real choice is between a radio-based curriculum, with the teacher in an important but supportive role, and a teacher-based curriculum, where radio has a special role to play, but as only part of a multi-media curriculum.

A number of issues arise in choosing between such policies. First of all, the decision is so fundamental that it would not - and should not - be made by CET alone. Secondly, a combination of both policies is possible, with direct teaching being used in areas where there is a general lack of skills in the teaching profession (such as maths), and the integrated approach being used in other areas. But of more relevance to this report is the question of how to evaluate the success or otherwise of radio if it was to be deliberately built in to an integrated multi-media curriculum.

If the various media are to be used selectively in order to use to the best effect the different educational characteristics of each medium, what are the unique or special educational characteristics of radio, compared with the other resources available?

There has been a substantial amount of research comparing the learning effectiveness of different media. Most of this has been inconclusive. This is partly due to the way most of such research has been designed, but it does seem that knowledge or content can be more or less communicated effectively through any media. In other words, the effective learning of content, as such (the object of most tests of learning gains) is not media-specific. However, more recent research

(by Salomon[6] in Israel, Jacquinot[7] in France, and Bates[8] in Britain) suggests that while the learning of content is not media-specific, some media have advantages over others in terms of presenting knowledge in certain ways, and in developing students' skills in thinking about content. This research suggests that due to the different ways in which different media present knowledge (moving pictures through television, voice and drama through radio, words and still pictures through print, the possibilities of two-way commuication between teacher and pupils), some media are more effective in developing different learning skills than others. Many educators would argue that the development of skills of learning is far more important than the teaching of content. Consequently, if evaluation procedures, by concentrating on conventional, standardised tests of performance, which emphasise the learning of content, fail to take into consideration the measurement of how learners are able to use content, in terms of organising, applying and transforming it, there is a serious danger of under-measuring the effectiveness of certain educational media.

In evaluating then radio as part of an integrated, multi-media curriculum it will be important to identify those educational functions which seem to be particularly appropriate to radio. These functions are not likely to be so much in terms of content itself, but in terms of the way content is presented, and used by the teacher and pupils. Thus experimenting with different radio presentational techniques (drama, singing, discussion, etc.) and discovering how these are used by teachers and pupils, and the kinds of thinking stimulated by the different techniques, will be extremely important in ensuring that the potential of radio is fully developed in a new curriculum. These ought to be worked out as part of the development of the new curriculum.

At this stage in the development of CET, it is not possible to predict which of the three policies will become prevalent. It is

important though that the evaluation activities are planned in such a way that it will be possible to respond to development of any of these three policies.

Work Plan for 1980 and 1981

During 1980 and 1981, it is proposed that the evaluation team should at a minimum concentrate on the following three areas of work (in order of priority):

1. Establishment of base-line data for formative and summative evaluation purposes.
2. Evaluation of BSPP (Maths)
3. Formative evaluation of radio for supporting the curriculum.

In addition, if extra resources are available, it should also work on:

4. Evaluation of BSPP (Thai)

1. Establishment of Base-Line Data

Base-Line data is required annually for two purposes: firstly, to provide the management of CET with information which allows it to assess comparative areas of weakness within the system; secondly, to provide an overview of the work of the school radio service as a whole. This can be done in two ways:

a. Annual survey of schools Each year, information on the following should be collected from the schools:

i. No. of working radio receivers
ii. Reasons for radio not working
iii. Clarity of reception
iv. Availability of manuals (date of delivery; whether or not enough)
v. Suitability of manuals

vi. No. of classes in each school using each programme series (series = subject by grade, e.g. 3rd Grade Thai)
vii. Reasons for not using series
viii. No. of programmes listened to in each series
ix. Teacher ratings of programmes in each series
x. Other CET media - delivery
- use
- ratings

Similar surveys were carried out in 1973 and 1979. Both were censuses, in that all schools (about 30,000) were included in the survey. However, while the 1973 survey obtained an overall response rate of 82 %, the 1979 survey obtained a response rate of only 45 %. This is probably due to differences in the method of distribution. In 1973, distribution and collection were organized through the changwad. In 1979, questionnaires were mailed direct to the schools. High response rates will be essential, since the lower the response rate, the greater the likely bias towards radio users. To monitor the impact of the new network, it will be essential to obtain reliable base-line data.

The following procedure (based on the 1973 survey) is therefore recommended :

i. The Director of Education in each Changwad is written to, and the purpose of the survey is explained. The Director is asked to nominate a member of his staff to be responsible for the distribution and collection of the questionnaires within the Changwad.

ii. Questionnaires are designed by CET evaluation staff, with assistance from a Ministry research section, and in conjunction with the Bureau for Testing Service. (The foreign consultant may also assist with design of the first questionnaire). The first questionnaire should

be designed so that data collected in different years can be compared (i.e. the wording of questions, rating scales, etc. should be consistent from year to year). The programming for the data analysis will be prepared by the Bureau for Testing Service.

iii. Questionnaires should be despatched to the Changwads towards the end of December. Schools should be asked to say how many programmes they had used up to the end of January, and be asked to return the questionnaires in the first week of February (i.e., before the end of year examination activities reach their height).

iv. Questionnaires are collected by the nominated changwad supervisor, who chases up those schools who have not returned their questionnaires by the end of the second week in February.

v. All questionnaires should be returned to CET by the end of February. Direct contact is made with supervisors to chase up any remaining non-responders.

vi. Questionnaire data are processed and computer analysed by the Bureau for Testing Services.

vii. CET evaluation unit prepares a report for CET management, summarising the main data, noting trends from previous years, and reporting on sub-studies. A copy is sent to NEC, for comment.

As well as summarising basic data about overall use of radio, equipment availability etc., a number of analyses will be required from the questionnaire :

i. Each year, figures should be produced to show the relative use and ratings of each series of programmes. (Appendix 2 is an example). This allows CET management to tell at a glance the comparative performance of programmes, both across subject areas and within subject areas. This will assist in identification of areas which require remedial treatment, and allow management and producers to see the consequences of different uses of radio. Analysis year by year will also show trends over time.

ii. Tables or "maps" can be produced each year, showing the use of radio in each Changwad/educational region. In this way, the spread of radio, as the new network is expanded, can be observed. This will also enable the identification of those changwads which have not organised adequately distribution or maintenance of radio sets (see Appendix 3 for an example).

iii. Sub-studies can be carried out, comparing selected series across different years. For instance, if, as a result of formative evaluation (see below), programmes for Thai at Grade 3 are remade, the survey will allow for comparison between the new and the old programmes.

iv. Statistics for schools using radio should be broken down by educational region, urban-rural, size of school, drop-out rate, and socio-economic intake of school (if this information is available).

v. The survey will provide reliable nationwide data on the overall use of school radio, on an annual basis. This can be used for summative evaluation purposes.

It is recommended that this survey should be carried out for each year of the project, beginning in January, 1981. This will give data for the following "milestones" of the project:

DATE	SCHOOL-YEAR	PROJECT MILESTONE
January 1981	1980 - 81	Base-line: the old system, without changes.
January 1982	1981 - 82	Data for mid-term evaluation; pre-testing of programmes.
January 1983	1982 - 83	First school year with Phase 1 operational; first pre-tested programmes available. First year of production from new studios.
January 1984	1983 - 84	First full year of transmission of programmes made in first school year, with full network operational.
January 1985	1984 - 85	Data for final summative evaluation.

Even if the construction of the network or studios is delayed, there will still be a need for an annual survey.

It has not been possible though on this mission to decide whether or not a full census of schools is required each year, or merely a carefully chosen sample of schools.

The costs for a census of all schools would be as follows:

Extra clerical assistance	1,000 baht
Paper for questionnaire	5,600 baht
Postage	7,000 baht
Programming (overtime)	2,000 baht
Cards	2,700 baht
Punching (overtime)	27,000 baht
Total	45,300 baht

This would be the maximum cost. If the survey is properly planned and scheduled, it is likely that the Bureau for Testing Services could cope without having to use a great amount of overtime. CET has some experience in handling such large surveys. The survey will require about four man-months each year of evaluators' time, plus overtime for about 2 people for two weeks to help with the handling of the questionnaires.

One argument for a census each year is that this will allow a fully detailed, accurate picture to be built up on a national basis, changwad by changwad. A smaller sample of around 500 schools would perhaps lead to gaps in the coverage of certain kinds of school in certain areas.

Perhaps the most important reason though for having a census each year is that in 1980/81, the base-line for the study, the number of schools using certain series is likely to be quite small. In 1973, for instance, just over 3,000 primary schools (13 %) used music programmes, at any grade. Figures are not available for how many listened at a specific grade (there were six music series in 1973), but one may well end up with less than 100 schools following any one series in 1980/81. Using a small sample, one might well not have enough schools using any specific series in the base-line for comparative purposes at a later date. The number of schools using radio at a secondary level in particular is likely to be small.

There are on the other hand several advantages in sampling. It reduces the costs and the amount of work (primarily in punching), and one could expect slightly higher response rates, especially if it were possible to sample different schools each year. However, this could cause methodological problems in matching samples from year to year. In any case, for summative evaluation purposes, there ought to be a national census in 1981 (base-line), 1982 (mid-term summative evaluation), and 1985 (final summative evaluation).

On balance, then, it seems that a census each year might be preferable in that it will allow for more consistency in the data, and more flexibility in the analyses of the data. If it is decided to use a sample, great care will be needed in drawing up an appropriate sampling frame, and NEC should be satisfied that the sampling procedure will provide a national, representative picture.

b. Annual statistical digest At the end of each school year (i.e. April), the CET evaluation team should begin to prepare an annual digest of statistics, drawn from within CET itself, as follows:

i. an analysis of in-school programmes produced and transmitted during the year, the number of producers/ script-writers employed in each subject area, and an average production load per producer (see Appendix 4 for an example). A similar analysis should be carried out for programmes produced in the CET studios by other agencies (RCP, TTD), separating programmes produced by their own producers from those produced by CET's. Similarly, an analysis should be made of programmes produced and transmitted for other areas of CET's activities (e.g. general educational broadcasting). In other words, the digest should give a comprehensive account of the year's production and transmission of all programmes produced in CET's studios. A special note should be made of failure to transmit as scheduled and the cause of failures. Preparation of such statistics should be the responsibility of individual section heads. Similar analysis of output and demand should be carried out by the other media section.

ii. CET should set itself a realistic target for average production load per producer, low enough to allow producers time for adequate programme preparation,

utilization and evaluation activities, but high enough to ensure that technical facilities are optionally used and unit costs are not excessive.

iii. an analysis of utilization of major technical facilities, in particular studio use. (This will apply only to the new facilities.) This should indicate the amount of use of major technical facilities. Unused production time within scheduled work-hours, and the reasons, should be indicated, (e.g. rehearsal time; recording time; planned maintenance; technical breakdown; studio empty because deadline missed; unscheduled time - i.e. the balance of time left). Again, target figures should be set by CET. Preparation of such statistics should be the responsibility of the Chief Technician.

iv. a financial analysis, allocating costs on the basis of series or areas of production. This will require a method of analysis which separates fixed costs (rent, building maintenance, fixed salary costs, such as the costs required to provide studio crews, evaluation staff, etc.) from variable costs which can be assigned to a particular series, such as the hiring of script-writers, programme expenditure (artists' fees, etc.), the cost of printed support materials (manuals, etc.). The analysis should look something like this:

- CET's overall budget for the year (A)
- fixed overheads for CET as a whole (i.e. costs that cannot be allocated to projects) (a)
- in-school : fixed costs (producers, evaluation) (b)
  variable costs per programme series $(c_1) \rightarrow (c_n)$
- general educational broadcasting : fixed costs (d)
  variable costs $(e_1) \rightarrow (e_n)$
- other media section : fixed costs/variable costs

This breakdown should be applied to all the sections of CET, and the total of (a) + (b) + (c) .... + (n) should equal (A). Information for each section should be supplied by the section head, and collated by the evaluation team.

v. a financial analysis of radio receiver maintenance should be collected by the evaluation team each April. The Changwads (both Ministry of Interior and Ministry of Education departments) should be asked to supply an analysis of receiver maintenance and replacement costs (including the purchase of batteries) each year.

vi. a brief summary of the main results from the annual survey, and a brief description of other evaluation activities, should be prepared by the Head of Evaluation.

vii. a breakdown of staffing in each section (including recruitment), and an account of staff training activities during the year (including fellowships), utilization training, and other non-production activities should be drawn up by the general administrative officer.

viii. an overview of the past year, summarising successful projects and difficulties encountered, should be prepared by the Director of CET.

ix. an analysis of new developments, changes in policy, and plans for the following year, should be drawn up by the Director of CET.

The annual digest should be the overall responsibility of the Director of CET, but the Head of Evaluation should have operational responsibility for its preparation. This will require about four man-months of evaluators'

time in 1980-81, to set up the system, and about one man-month a year subsequently. The digest should be developed from April, 1980. If possible, it should look back over the year 1979 - 1980, although it may prove difficult to collect all the data required, because information may not be available in the appropriate form. However, the exercise will be useful for developing a system for the year 1980-81. It is very important that all those responsible for collecting the various kinds of information are made aware as soon as possible - and at least before June, 1980 - of the information required, and the form in which it is required. It will be the responsibility of the evaluation team to make people aware of this requirement, and the evaluation team should keep NEC informed of how it plans to provide the statistical digest.

When the digest is completed, the Director of CET should discuss with the various section heads the implications of the information, and what remedial steps can be taken in the following year to improve any weaknesses which have become identified. NEC should receive both the detailed report of the annual survey and the annual statistical digest.

2. Formative and Summative Evaluation of Radio for Direct Teaching (BSPP- Maths)

CET is already committed to a heavy programme of formative evaluation in 1980 and 1981 for BSPP, covering a total of 160 Maths programmes a year. These evaluation procedures have already been designed by IMSSS, Stanford University, and are described more fully elsewhere.[4] The IMSSS evaluation design will require the equivalent of at least one year of evaluation manpower from CET staff, in each of the years 1980 and 1981.

The BSPP project will provide CET staff with valuable training and experience in formative evaluation procedures, and it should prove possible to adapt these procedures to other areas of production. The availability of foreign technical evaluation assistance from Stanford

University for BSPP on a regular basis over a two-years period will enable advice on evaluation activities to be available at each stage of BSPP.

However, as valuable as this project will be, it will be important to balance the demands for CET evaluation manpower for BSPP against manpower needed to develop a more comprehensive system of evaluation for the whole of CET's activities encompassed in the fifth education project. In particular, careful consideration needs to be given to the extent of involvement of the head of the CET evaluation team in BSPP activities. It will be essential that this person has sufficient time in 1980 and 1981 to develop procedures for the compilation of the annual statistical digest, to develop procedures for the formative evaluation of programmes supporting the curriculum (see below), to work on the survey of schools at the end of each school year, to recruit and train additional evaluation staff, and to administer effectively the evaluation team. At the same time, the head of the evaluation team should have the opportunity to gain experience himself from BSPP in formative evaluation procedures.

It is therefore proposed that the head of the evaluation team, and the temporary evaluator to be appointed in January 1980, should work together on BSPP, almost on a full-time basis, during January, February and most of March, 1980. Gradually, the temporary evaluator should take over the main CET evaluation work on this project, to enable the head of the evaluation team to devote more time to his other activities, although the head of the evaluation team should have overall formal responsibility for BSPP evaluation, and should assist directly whenever his other duties allow. However, the main CET evaluation work-load for BSPP should be carried by the temporary evaluator (who should become permanent in 1981), assisted wherever possible by other CET staff.

3. Formative Evaluation of Radio for Supporting the Curriculum (1980-1981)

The results of BSPP, and hence a decision on whether to extend BSPP to other grades of mathematics or to the teaching of Thai, will not be available until mid-1981. In the meantime, in addition to 160 programmes

for BSPP, over 300 programmes aiming at supporting the national curriculum will be produced during 1980. It is therefore proposed to begin in 1980 to evaluate some of these programmes, to see in what way this use of radio could be improved. The aim eventually will be to adapt these procedures to the pre-testing and formative evaluation of programmes which will be fully integrated into the new curriculum, should such a policy for school radio be decided.

It is proposed to use formative evaluation procedures similar to those being used for BSPP. However, in the case of BSPP, the main objective is learning gain, whereas for enrichment, the main objective is interest and motivation, and for integration, adding new perspectives to the teaching process. Furthermore, with BSPP, radio is the main medium of instruction, whereas for enrichment and for integration, it is only a small part of the curriculum. Consequently, the BSPP procedures will need to be modified.

To provide adequate information about programmes on a series, several procedures are necessary.

a. A description of the programme in context. The evaluators will need to see the programme as part of the total teaching experience received, and to understand the construction of the programme. Thus the following will be required :

i. Programme analysis. The programme (and accompanying section of the teachers' manual) should be analysed, according to its main content, and segmented into production techniques (straight "lecture", discussion between several people, drama etc.). Special attention should be paid to points in the programme (or teacher manual) which require the teacher or pupils to carry out some activity, and to "pacing", i.e. the number and level of teaching points raised in the programme. This analysis should be done in conjunction with the producer.

ii. Production objectives. The producer and script-writer should be asked what they were trying to achieve through the programme, and how

they would know whether or not they had been successful. They should also be asked what they would like the evaluation to find out about the programme (e.g. the success of a particular technique).

b. Classroom observation. A classroom observation schedule will need to be designed. This should include observations on the quality of reception and amplification, state of teacher and class readiness and preparation, control of the teacher over the class before, during, and after the programme, conditions for listening (external noise, interruptions, etc.), points at which pupils' attention seemed to be stimulated or wander during the programme, observed involvement of pupils with the programme (e.g. "talking" to radio), teachers' follow-up activities, and subsequent discussion of programmes, or questions raised by pupils. Background data about the school (number of children in the class, quality of physical provisions, etc.) should also be noted.

c. Pupil questionnaire. Pupils should be given a brief questionnaire to complete, after the radio lession is finished (if pupils are at a grade where this would be appropriate - some assistance in completion may be needed for some children.) The questionnaire should ask pupils for their reactions to the programme, (i.e. did they like it?), and some simple questions about the content of the programme, as a measure of comprehension. It may be necessary to ask for time out of another lesson to administer this questionnaire. Questions should be pre-coded, for quick and easy computer analysis.

d. Teacher interview schedule. The class teacher should be interviewed after the programme (preferably in a break, or when the pupil questionnaire is being administered.) The schedule should ask for information about the appropriateness and clarity of the teacher's manual, the relevance and timing of the programme with regard to the curriculum, the teachers' reaction to the quality of the programme and to the follow-up activities, what might be done to improve this particular programme or the series as a whole, and their reaction to

other programmes in the same series. At the end of the interview advice could be given to the teacher on ways in which he or she might improve the utilization of their programmes, although this will need to be done tactfully.

e. Postal Questionnaire to Other Users. A questionnaire should be distributed to a carefully chosen representative sample of about 50 schools using this series (information on this should be available from the annual survey) to provide a reference point for the representativeness of the data collected from school visits. Most of the questions should replicate questions asked in the teacher interview schedule, and should as far as possible be pre-coded, for quick and easy computer analysis. High response rates should be sought, using local changwad supervisors as much as possible to distribute and collect the questionnaires. This questionnaire would be sent out for all programmes specifically selected for formative evaluation.

f. Postal questionnaire to non-users. A questionnaire (or even a letter) should be distributed to about 30 schools with radio sets and the relevant grades who do not use the series, asking them to provide reasons for their non-use of the series. These 30 responses should be analysed, and followed up by visits to about five of these schools, to discuss further with the head and staff their reasons for not using the programmes. The 30 selected schools should be sent the questionnaire or letter only once for any one series, through the local supervisor.

g. Organisation of school visits It is recommended that at least two schools should be visited for the evaluation of each programme, one in the Central Region, and one in one of the other three regions. It is recommended that in the Central Region, an observation team is created, consisting of one CET evaluator and one producer in the series. It is also possible that assistance could be provided by using one or

two part-time students, and by a staff member from one of the Ministry's Planning and Research Units. If this additional help can be provided, it should be possible for each programme selected to be observed in two schools in the Central Region, so long as each observation team had a CET evaluator or member from a research unit and a CET producer in the team.

In addition, a changwad in one of the other three regions should be chosen, and the assistance of supervisory staff sought for programme evaluation. Postal questionnaires would be distributed within the changwads where school visits were also taking place. Two supervisors would be trained by CET evaluation staff on classroom observation methods and the administration of the questionnaires and interviews. It is recommended that the supervisors should receive training within their changwad, in June, 1980.

Schools should be chosen so that one is urban, and another rural. Evaluation teams should alternate visits to urban and rural schools. Schools should be very carefully chosen for visits, so as to be representative of major "kinds" of Thai schools. Table 3 summarises the organisation of school visits.

Table 3 : Organisation of School Visits (Example only)

	Type of School		
Programme No.	Central Region (Team 1) (CET)	Other Region (supervisors)	Central Region (Team 2) (if possible:) ↓
3	Urban (Bangkok)	Rural	Urban (not Bangkok)
7	Rural	Urban	Urban (Bangkok)
9	Urban (not Bangkok)	Rural	Urban (Bangkok)
14	Rural	Urban	Urban (Bangkok)

(i.e. 4 rural schools, 4 Bangkok schools, 4 urban schools (not Bangkok))

It is recommended that for every school visit in the Central Region, a member of the relevant production team should be present. Ideally, at least one member of the relevant production team should make at least one visit in another region as well.

h. Analysis and Report Classroom observation schedules will be collated for all the visits for each programme under each heading, by the evaluator, who will prepare notes under each heading (classroom conditions, pupil involvement, etc.). This should be as detailed and precise as possible, and typed up, as an appendix to the programme evaluation report. Similarly, the teacher interview should be typed up in such a way that the responses of different teachers to the same questions can be compared. Again this should be as detailed and accurate as possible, using the teachers' own words, and should also be an appendix to the report. All the open-ended responses from questionnaires should be collected for each question, and typed up, also as an appendix.

Computerised data (pupil questionnaires, postal questionnaires) will be punched and processed by the Bureau for Testing Services. The amount of data processing per programme evaluated will be roughly as follows (assuming three visits per programme):

	Total cards per year		
	8 progs.	16 progs.	32 progs.
Pupil questionnaire: 135 cards, 40 columns	1,080	2,160	4,320
Postal questionnaire (users): 50 cards, 70 columns	400	800	1,600
Postal questionnaire (non-users): 30 cards 40 columns	240	480	960
Total	1,720	3,440	6,940

Again, if properly scheduled, this can possibly be handled by the Bureau for Testing Services without overtime being necessary. However, one should perhaps allow 5,000 baht for overtime for punching, and 5,000 baht for

programming, by the time the evaluation unit is fully staffed (1982).

A more serious and difficult issue is the need for adequate clerical support for the evaluation activities. The provision of open-ended qualitative data from teachers and pupils is extremely important in formatively evaluating radio used for enrichment or as an integrated part of a national curriculum. It is the producers in the end who have to make production decisions, and qualitative comments have more impact and meaning than statistical summaries. Qualitative comments also provide insight into how programmes could be improved. On the other hand, the full range of comments must also be available. The collection, ordering, presentation, and interpretation of these qualitative data require substantial typing and clerical work. In addition, there will be questionnaires and reports to type, printing, collation and despatch of questionnaires to organise, and the copying and distribution of evaluation reports. One clerk then will be required for every eight programmes evaluated.

The evaluator will tabulate and summarise, in report form, the data collected from each of the procedures, for each programme. He will need to interpret the data, and come to conclusions about the programme and what improvements may be necessary. The interpretation and conclusions will inevitably be to some extent subjective, but this will not matter so long as the producers have access to, and read, the appendices, and so long as the evaluator discusses the report with the producers as he is preparing it. It should be noted that the report is not an end in itself (it is not intended as a research publication), but is a means of bringing together information about the programme in order to prompt discussion about ways to improve the programmes. The aims of the report can be specified as follows :

i. to build up an accurate and comprehensive picture of how teachers and pupils are using and reacting to the programmes

ii. to provide an analysis of the main successes and weaknesses in the programme and related material

iii. to provide practical guidelines for improving the programmes themselves, or improving the ways in which they could be used.

(However, as shall be seen later, these procedures can be used to provide information about specific policy or production issues.) Once the report has been completed, it should be presented to the production team responsible for the series, and a meeting between the evaluation team and the producers should be held within two weeks to discuss the implications of the report for the remake of existing programmes or the production of future programmes.

It will be important to plan very carefully the scheduling of data collection, report writing, and production of remade programmes. It will take eight weeks at a minimum between collecting the data and having the information required for remake decisions for any one programme. An intensive period of data collection will inevitably delay the writing of reports on the later programmes. For this reason, it is likely to be better to sample programmes from a series, rather than to collect data on every one. If 16 programmes transmitted at weekly interviews are evaluated, with two evaluators, it would be 12 months later before reports on the last two programmes would be available. (see below)

Plans for 1980 and 1981 In working out plans for 1980 and 1981, it is essential to have a reasonable estimate of the work-load resulting from the formative evaluation of individual programmes. It can be seen from an examination of the procedures above that each programme formatively evaluated will require about two weeks of evaluator's time for planning the visit, designing the schedules, carrying out the visit, and collecting the data, and a further two to four weeks to arrange the data, and write up the report. (Each programme evaluated will also require about four days' time from a producer.) This means that to evaluate eight programmes in a series, at this level, one man-year of evaluation time will be required.

In 1980, even with the head of the evaluation team, a temporary evaluator, and a Thai national specialist in evaluation, there will be only one man-year of evaluation time available for this kind of formative evaluation. In 1981, with the head of evaluation and three permanent evaluators, there will be two man years of evaluation time available, and in 1983, when the group is at its full size, three man years of evaluation time will be available.

This kind of evaluation then needs to be used very selectively, as it is labour-intensive. A meeting was called in November, 1979 of the senior in-school production and evaluation staff (including the foreign consultant), to discuss priorities for formative evaluation. At this meeting a number of decisions were made :

a. with manpower available for the evaluation of only eight programmes in 1980, it was decided to select four programmes from two series. It was hoped that, since programme production followed a more or less similar pattern from programme to programme in the same series, evaluation of four programmes out of sixteen should provide sufficient information to influence decisions about all sixteen programmes.

b. the two series from which programmes would be selected were to be third grade Thai, and third grade Life Experiences. The third grade was chosen, because the new curriculum for the third grade would be introduced for the first time in 1980. Thai was chosen because it was a basic subject, and because the producers were finding it very difficult to get good scripts and production methods, given the constraints of the curriculum. Also, a decision would have to be taken in 1981 whether to extend BSPP to Thai. This evaluation of Thai as enrichment would provide useful comparative material, and be a preparation for such a decision. Life Experience was chosen, because it was a new subject in the curriculum,

and producers had no idea about how the radio programmes had been received so far. Also, Life Experience programmes use a variety of formats, and some information on the relative advantages and disadvantages of the various formats was desired. The discussion as to which programmes in each series would be evaluated in 1980 would be left to the head of the evaluation team, in consultation with the producers in this area.

c. it was decided that after a series had been formatively evaluated, and revised as a result, the programmes would remain for several years, allowing producers to spend longer on new programme production, and on utilisation and evaluation activities.

d. in 1981, it was decided to evaluate all 16 programmes in a series. The series would be chosen in 1980.

It is recommended that a similar meeting should be held each year, in December or January, to determine evaluation priorities for the coming school year.

Plans for 1982 and beyond. By the end of 1981, a decision will have to have been made as to whether to continue making enrichment programmes, whether or not to extend BSPP to other grades and subjects, or whether to design radio programmes integrated into a teacher-based curriculum. The formative evaluation design suggested here allows for any one of these three objectives. The procedure could be adapted to the pre-testing of programmes (i.e. testing in the year previous to transmitting them nationally, as part of the development of a new curriculum or new formats) by merely substituting tape-recordings of pilot programmes, instead of the actual broadcast. Care would need to be taken though to ensure that the recording was played at exactly the right time.

If the recommended staffing is achieved, it should be possible to formatively evaluate up to 32 programmes a year, in this way, as well as to carry out the other evaluation projects (annual survey, statistical digest). This facility then could allow every programme for two series to be pre-tested; or half the programmes for four series to be evaluated; or four programmes in eight series to be evaluated.

This evaluation facility can be used to try out or evaluate various general policies regarding the use of radio, to test out or develop new formats, to evaluate the need for remaking the existing programmes on a series, or for other purposes which cannot at this moment be foreseen. The decision on how to use this facility from 1982 onwards should be made nearer the time, in the light of the overall policy for in-school radio at the time, and the development of the studio and network.

Thus the unit should be able to evaluate formatively eight programmes in 1980, 16 in 1981, and 32 in 1982 and subsequent years, in addition to assesting with the BSPP (Maths) evaluation in 1980 and 1981 and collecting and analysing the base-line data.

4. Formative Evaluation of Radio for Direct Teaching (BSPP-Thai)

CET is considering extending BSPP to the teaching of Thai in 1981. However, this must at the moment be considered still a tentative proposal, for the following reasons:

(a) CET wishes to await the outcome of the evaluation of the BSPP maths experiment before committing itself to extending the experiment to Thai.

(b) if BSPP were generally extended to maths and Thai in just four grades, it would require 20 hours a week transmission time out of the 25 hours a week planned for in-school programmes on the new network.

(c) to produce sufficient radio for one grade each of Thai and maths per year will require an annual production rate of 320 programmes a year. If other production were also to continue, it is unlikely that enough capacity could be found in the present studios for all the productions required.

(d) the maths experiment is largely an existing curriculum which has been very carefully developed in another country and slightly adapted for Thailand. To develop radio for direct teaching of Thai however will require a more substantial curriculum development, with a much larger requirement for field-testing and formative evaluation than the current maths project, particularly if CET was also to be responsible for the analysis of the Thai evaluation data.

(e) there is as yet no agreement for the provision of technical assistance from Stanford University for the development of BSPP in Thai.

In short, the decision to extend BSPP to the teaching of Thai requires a major policy decision about the role of radio in in-school education in Thailand, and would pre-empt not only most other forms of production, but also the decision on what kind of evaluation system to develop. This is because at least two man-years of evaluation manpower would be required, if CET was to carry out the whole of the formative and summative evaluation of BSPP-Thai, and another man-year to continue the development of BSPP-Maths, thus committing the major part of the evaluation team to work on BSPP.

CET therefore proposes at this stage to give the development of a system of formative evaluation for programmes used for other than direct teaching priority over formative evaluation for BSPP-Thai in 1981-82. If it is subsequently decided to extend BSPP into Thai in 1981-82, and in Maths in subsequent years, an additional permanent evaluator and a temporary evaluator would need to be sought for appointment in 1981.

Thus, the implications of extending BSPP-Maths beyond 1981-82, and developing BSPP-Thai in 1981-82 and subsequent years, would be:

(a) instead of requiring an additional three permanent evaluators in 1981, four permanent and one temporary evaluator would be required (a total of six) of whom three would work on BSPP developments;

(b) three evaluators would be available for other evaluation in 1981, permitting up to 16 other programmes to be formatively evaluated, as planned;

(c) in the years following 1981 (assuming that BSPP continues in maths and Thai), the number of programmes for other purposes which could be evaluated would be reduced from the planned 32 to 16, or to 8 if the temporary evaluator in 1981 was not made permanent;

(d) if the two extra staff are not appointed, and BSPP is extended in Thai and maths beyond 1981, no other forms of formative evaluation (other than the provision of base-line management information) will be possible.

A Note on the Programme Evaluation Analysis Computer (PEAC)

The Ontario Educational Communications Authority (OECA), and Children's Television Workshop (CTW), have jointly commissioned a portable, computerised system of data collection and analysis for formative evaluation of educational programmes, which provides feedback to producers within two to three days of making a test programme or segment of a programme. The system allows the results to be available either in hard copy (in the form of computer print-outs) or through graphical display on a colour television set. By synchronising the sound of the radio programme with the continuous graphical display on the TV monitor, it is possible to see exactly where in the programme interest is increased or drpps, where pupils fail to comprehend or are confused, etc.

The data is collected by means of card-less handsets, with an array of push-buttons. Children can be asked to press a certain button when they

do not understand, or when they are bored, and their reactions are recorded and stored in the handset. The handsets can also be used to record responses to multiple-choice questions, immediately following - or even during the programme. The handsets are then collected and plugged into a central, portable computer, which "reads" the data on the handsets, transfers the data on to "diskettes", wipes the handsets, and recharges them for future use.

Analysis of the data is prepared beforehand by the evaluator. The programming is extremely simple. The evaluator has to respond on a terminal to a set of "questions" from the computer about how he wants the data analysed and presented. The programming instructions are stored on a "control diskette", which then analyses the data from the diskettes containing the pupil responses. Up to 240 separate inputs on a single programme can be handled.

A pack of 40 handsets, master computer, data analyser, printer, the master programming instructions (i.e. software), and travelling case costs approximately US$ 25,000.

The system has been in use by CTW and OECA since only the beginning of 1979, and so its potential is still being explored. However, initial reactions from both producers and evaluators are highly favourable.

Such a system has to be used, of course, with considerable care. It could be useful in Thailand, particularly when radio is used for direct teaching of simple concepts or skills - such as in BSPP mathematics. However, to use the system effectively, evaluators must be absolutely clear about what they want to know. The system is also limited to evaluating programme production itself, and not the other aspects of an educational radio system. Its main advantages are the speed with which feedback can be collected and analysed, and the easily understandable nature of the data when presented visually.

It is recommended that PEAC should not be considered until at least two years experience of conventional formative evaluation procedures have been built up. If then it is still considered likely to be of value, for PSPP or for other series, it may be possible to find financial assistance for its purchase from an international foundation or aid agency. One week's training for one evaluator in Canada would be necessary.

Organisation of the Evaluation Team

Civil service regulations make it difficult to create quickly a new unit of this kind. Evaluators will therefore be appointed, like producers, to the general position of "educators" within the in-school section of CET.

However, whatever the formal lines of communication, two points are essential in practice:

(a) the head of the evaluation team must be directly responsible to, and report to, the Director of CET.

(b) the evaluation budget must be kept separate from the production budget.

The head of the evaluation team should be a member of any senior CET management group that may be created, and should be expected to contribute towards discussions of policy and management.

One advantage of locating the evaluation team within the in-school section is that this will provide the opportunity for the evaluators to work closely on a day-to-day basis with producers and script-writers at all stages of production. When considering accommodation, especially in the new production centre, every effort should be made to keep the in-school producers and evaluators together.

It is also important that sufficient time is available for producers to be fully involved with evaluation activities. In particular, it is

important that they have time to make school visits, and attend utilisation training sessions for teachers. At least ten days a year, on average, should be kept free for such activities, when planning producers' workloads, and it should be a part of a producer's conditions of service that he or she should be expected to take an active part in evaluation and utilisation activities.

Finally, it is important that close contact is maintained between evaluators within CET, and evaluators in other sectors concerned with the fifth education project, such as NEC, NCDC, the Test Bureau, RCP, TTD, and the planning and research divisions. To assist this process, seminars should be arranged on a regular basis (perhaps once a month) for the exchange of evaluation plans, procedures and findings. It may, as a result, be possible to co-ordinate activities better, to provide and receive assistance with field-work, to learn improved evaluation techniques, and to gain a broader knowledge of the impact of the radio component of the fifth education project, as a whole.

Summary of Work Plan

A detailed work-plan is set out in Appendix 5. This can be summarised as follows:

1980
- BSPP (Maths) Grade 2 (160 programmes) - formative evaluation
- Thai, Grade 3 (4 programmes) - formative evaluation
- Life Experiences, Grade 3 (4 programmes) - formative evaluation
- Preparation for annual census of schools
- Preparation for collection of base-line management data (annual digest of statistics)

1981
- Annual census of schools (1980-81) - report
- Annual digest of statistics (1980-81) - report
- Thai Grade 3, Life Experiences Grade 3 - summary of formative evaluation reports

BSPP (Maths) - Grade 2, summative evaluation report

* Meeting (July) to determine in-school radio policy in the light of the above reports - and subsequent evaluation priorities

BSPP (Maths) - Grade 3 - formative evaluation
16 programme series (to be selected) - formative evaluation
Preparation for annual census of schools
(Possible preparation for BSPP (Thai), Grade 2 - formative evaluation)

1982 Annual census of schools (1981-82) - report
Annual digest of statistics (1981-82) - report
16 programme series - summary of formative evaluation reports
BSPP (Maths) Grade 3 - summative evaluation report
Collection of additional data (with NEC) for mid-term summative evaluation
(Possibly: BSPP (Thai) Grade 2 - possible summative evaluation report)

1983-1985 Annual census of schools - reports each year
Annual digest of statistics - reports each year
Formative evaluation policy dependent on programming policy - capacity for 32 programmes a year (minimum)

* It can be seen that a decision will need to be made around July, 1981, on programming policy for in-school radio (direct-teaching, enrichment, or integrated in the curriculum). For that decision, the Director of CET should have available the annual census and statistical digest for 1980-81, the summative evaluation of BSPP (Maths) Grade 2, and a summary of the main conclusions from the formative evaluation of Thai and Life Experiences (Grade 3). Subsequent evaluation policy will depend on that decision.

Staffing and Resources

1. Technical assistance The UNDP/UNESCO agreement with the Thai Government provides for 14 man-months foreign consultancy for CET. The

provision of a master plan affects to some extent the role of consultants on such a project. Ideally, there should be as much continuity as possible. Different views on the "best" evaluation procedures can be found within the profession, and the best laid plans can go wrong. However, this plan has been evolved after extensive discussion with CET staff and other agencies, and has been agreed with the staff most directly concerned. While amendments to the plan will inevitably be necessary, it will not be helpful to have major changes in direction or emphasis, particularly since formative evaluation procedures have of necessity been closely integrated with plans for summative evaluation (see next section).

Thus the role of evaluation consultants throughout the project will be primarily to assist the implementation of the overall evaluation plan for in-school radio, as far as formative evaluation is concerned. Their role will be to advise on detailed evaluation procedures,(such as the design of a classroom observation schedule), on alternative strategies if a certain proposed strategy proves impractical, and to help the permanent evaluation staff in CET with the collection and interpretation of data. This brings the role of formative evaluation consultants much closer to that of the permanent Thai nationals who will be responsible for carrying out the evaluation activities. Through their training, and particularly through BSPP, the evaluation team will already have a good deal of knowledge and experience of evaluation procedures appropriate to the Thai situation. At the same time, the work-load on evaluation, if the plan is followed, will be considerable. Thus help of the right kind at the right time from consultants could still be most valuable for formative evaluation.

With regard to summative evaluation, the situation is rather different. It has not been possible at this stage to work out a detailed plan for summative evaluation, although it is hoped that an adequate broad framework has been established. Secondly, there is less experience in Thailand - or in most countries - of carrying out summative evaluation of such large-scale educational media projects. Thirdly, on grounds of objectivity, there are good arguments for foreign consultants being involved. Thus for summative

evaluation, the need for foreign consultants is much clearer.

The recommendations regarding technical assistance for summative evaluation are set out in the next section. Because of the need to get to know the project well and for the sake of continuity, it could be argued that each consultancy should be concerned with both formative and summative evaluation. This argument is strengthened by the strategy in this plan of basing the summative evaluation to a large extent on the build-up of accurate, reliable and and representative formative and management data (see next section). However, in the formative evaluation area, consultants will be working primarily on implementation; in the summative evaluation area, there remains much more scope for planning and design. Also, it can be difficult to find consultants who are competent in both areas.

For all these reasons then, the recommendations below for consultants to work with CET are made most tentatively. It should be left open to the Ministry of Education to decide whether it would rather use national or foreign consultants, or whether it needs consultants at all, for formative evaluation. Such a decision regarding the appointment of consultants for formative evaluation should depend on the quality and level of the people available for consultancy at the time they are needed, developments in in-school radio as a whole, and the success or otherwise of the evaluation team in implementing various parts of the evaluation plan.

Listed below are recommendations for consultants. Draft detailed job descriptions and terms of reference for each consultancy are attached as Appendix 6. These terms of reference may need to be changed nearer the date.

	LENGTH	DATES	DUTIES
1.	2 or 3 months (formative)	April-June 1980	a. To assist with the design of the annual school survey, including: to help decide whether to sample or census schools; to help specify

LENGTH	DATES	DUTIES
		the data analysis required and to liaise with bureau of Test Services regarding punching and programming; to assist with the lay-out and design of the questionnaire; to advise on the structure of the report; to consult on ways of ensuring a high response rate. b. To develop procedures for the collection of data required for an annual statistical digest of output, expenditure, and operation in CET; to test out the procedures by applying them retrospectively to 1979-80. c. To assist with the development of procedures for the formative evaluation of programmes for Thai and Life Experiences, Grade 3, including advice on programme analysis, classroom observation schedules and procedures, teacher interview schedules, and analysis and report writing.
2. 2 months (formative)	April-May 1981	a. To assist with the interpretation of data and writing of the report on the annual school survey. b. To check on the practicality of the formative evaluation procedures for Thai and Life Experiences programmes - particularly work load - and to suggest amendments if necessary; to assist with analysing and interpreting formative evaluation data (if necessary).

LENGTH	DATES	DUTIES
		c. To check on any difficulties arising from the collection of data on the annual statistical digest, and to suggest amendments if necessary.
		d. To assist NEC, by providing, summarisin or collating data required for the mid-term summative evaluation.

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3. (if BSPP is extended beyond 1981, and no consultancy is available from IMSSS, or USAID)

LENGTH	DATES	DUTIES
4-6 months (dependent on resources)	Nov.'81-June'82	To assist with the development of direct teaching of Thai by radio, including advice on formative and summative evaluation procedures.

NOTE: see also "Summative Evaluation" for further consultancy recommendations regarding CET.

Summary of Thai Staffing

Educators	1980	1981	1982	1983	1984	1985
Head of evaluation team	1	1	1	1	1	1
Temporary evaluator	1	-(1*)	-	-	-	-
Thai specialist (UNDP)	$\frac{3}{4}$	$\frac{1}{4}$	-	-	-	-
Evaluators	-	3(4*)	4(5*)	4(5*)	4(5*)	4(5*)
Total	$2\frac{3}{4}$	$4\frac{1}{4}(6\frac{1}{4}^{*})$	5(6*)	5(6*)	5(6*)	5(6*)

*If BSPP extended to Thai and Maths beyond 1981.

Research clerks	1	3	4	4	4	4

Summary of budget (non-staff costs)

	1980	1981	1982	1983	1984	1985
Annual school survey	50,000	53,500	57,000	61,000	65,000	70,000
Production of survey and annual reports	25,500	43,000	46,000	49,000	53,000	57,000
BSPP-Maths	9,500	21,000	23,000	25,000	13,000	-
Other formative evaluation	15,000	16,000	17,000	19,000	20,000	21,000
Total	100,000	133,500	143,000	154,000	151,000	148,000
(World Bank annual price increases)	8%	7%	7%	7%	7%	7%)

(Travel costs are not included in the above figures.)

Conclusions

The evaluation plan for in-school radio has been discussed in detail and agreed with the relevant staff in CET (including the Director). Priorities have been set for evaluation activities in 1980 and 1981, and detailed procedures for the collection and analysis of data, and its use

for revising both management and production policy, have been set out.

However, it is important that this plan is seen as no more than a first step towards the establishment of an on-going evaluation effort within CET. Priorities for the work of CET as a whole will change from year to year, and it is important that evaluation plans can adapt and develop according to the needs of CET.

While the establishment of routines or procedures for the collection of data is useful, it is also important that the evaluation team does not become so bogged down or obsessed with the routine of data collection that the overall purpose of the evaluation effort is lost. Evaluation aims to assist the overall management and efficiency of CET. Data collection is only one means to that end. The evaluation team must be aware of the overall policies of CET with regard to in-school radio, and should see its task as identifying areas of weakness and finding remedies for these weaknesses, wherever they may occur. This of course is the responsibility of everyone in CET. The evaluation team's responsibility however is to be <u>continually</u> aware of this, and <u>actively</u> to seek ways of identifying and remedying such weaknesses, in conjunction with the Director and staff of CET.

4. FORMATIVE EVALUATION IN OTHER SECTORS

The World Bank Staff Appraisal Report states (para. 2.40): "the educational users, with assistance from CET, would each be responsible for collecting audience data (e.g. on participation and completion rates, participant performance, and program relevance) and for continuous testing and revision of programmes."[2]

Because of the brevity of my own mission, it has not been possible to elaborate proposals in detail for each of the other areas (general educational broadcasting, RCP, and TTD) in the same way as for in-school programmes. This mission therefore has concentrated on identifying what each of these sectors themselves was considering doing regarding evaluation, identifying areas and planning for technical assistance for evaluation, and on ensuring that when sectors are developing formative evaluation plans, they were also aware of the need to collect information in such a way that it could also assist the summative evaluation process.

CET: General Educational Broadcasting

This section broadcasts seven hours a day of cultural and enrichment programmes from its own radio station, expanding to 10 hours a day when the new network is operational.

CET requires information about the audience listening to these programmes, their likes and dislikes, and the potential for improving the impact or effectiveness of the programmes.

Two kinds of study are possible. The first would be a yearly or half-yearly sample survey of listeners, carried out by random street or household interviewing, either by a market research organisation, or by the National Statistical Office. The former would be relatively expensive, but costs could be reduced altogether if the study could be included with or added to other studies planned by NSO (such as the annual household survey). All this would require is someone from the

general educational broadcasting section to liaise with NSO, determine, or rather, select, the questions to be asked, and discuss an appropriate sampling procedure, based on the area covered by MOE broadcasts. Such a survey should provide a good idea of the kinds of people listening to the service, and the most popular kinds of programme. If carried out regularly, trends in audience listening (or ceasing to listen) could be observed. The possibility of such a regular survey could be explored immediately. The foreign consultant recommended for formative evaluation for CET for April-June, 1980, could assist with setting up the survey, but this should not be necessary, and in any case, the consultant should not spend more than two or three days on this activity.

The second kind of study aims to obtain more detailed feedback on certain kinds of programmes. At the moment, spontaneous letters are received and answered by the producers, but no analysis of "trends" is made. Sometimes, a short questionnaire is included in the Ministry of Education's regular publication regarding these programmes, which is available to the general public. However, although responses to the questionnaires are read, no systematic quantitative analysis is made.

Any further steps to get more systematic information will require additional manpower or expenditures. It would be possible to set up a panel of regular listeners, who would be asked to come to a meeting and discuss a programme or a series, or who would be asked to answer specific questions about programmes through a postal questionnaire. In either case, to do this on a scale large enough to cover a reasonable number of programmes or series would require someone on a full-time basis to organise this work, analyse the information, and prepare reports. This person might also be responsible for collating letters and telephone calls from listeners, and answering queries from the general public. A budget would also be required to provide the panel with travel expenses and light refreshments.

It can be seen that much could be done immediately, with just a reallocation of existing resources, and very little expenditure. If it proves impossible at the present time to allocate one of the existing

posts full-time to such activities, one of the additional posts recruited to assist with the increase in production from seven to ten hours a day could be used for this purpose. Use could also be made of visiting consultants for advice on improving the feedback system for general educational broadcasting, but it is recommended that this should not receive priority over the work involved in establishing and running an in-school evaluation team.

However, it is recommended that, since the new production centre will be used heavily by the general educational broadcasting section, at least an annual survey sample of listeners, organised in conjunction with NSO, should be set up, and that this information should be considered by NEC in the summative evaluation of the project. The first survey should be carried out as soon as possible, but certainly no later than June 1981. The design of the survey should be worked out together between CET, NSO, and NEC.

Radio-Correspondence Programme

Gathering data for the purpose of reviewing, evaluating, and planning has been one of the major problems since the initial phase of the RCP operation. There was neither a system nor guidelines for the staff, so various types of information were collected on an unorganized basis and questions remained unanswered. Being aware of these problems, RCP has worked with regional centre staff early this year (1979) to establish a workable feedback system.

According to the plan, the RCP central office should receive the required data from the regional centres at different times of the year, depending on the types of programme the center operates. For functional education, level 3, information should be fed back to the central office twice a year, a month after the beginning of the first and second semesters. For the three month interest group programme, on the other hand, information should be fed back at the beginning and ending of the programme.

Each regional centre employs its own method for gathering data from the learners, organizers, head organizers and provincial centres within each region.

At the due time, the collected data should be reviewed and analyzed in order to feed back to the central office in Bangkok.

Experience shows that this method does not work properly. The kinds of data to be gathered, the whole method and system of data-collection, and the feed-back frequency must be reviewed and modified in order to make it practical and workable. RCP plans to start reviewing the situation with regional centres in December 1979, and it is planned to develop a new system by means of a workshop, with assistance from an international consultant, in 1980.

Foreign technical assistance is therefore required to develop a regular system of feedback for RCP. RCP have agreed in principle that they will try to develop a system of feedback through the regional and provincial centres that will enable accurate and reliable data to be collected on enrolments, drop-out and the use and ratings of the radio programmes (as well as on other aspects of RCP's whole programme). Particular attention will need to be focussed on appropriate transmission times for RCP programmes as these will be in competition with TTD's and STU's for similar times. This information can then be used to modify policy and procedures within RCP. RCP has also agreed to draw up an annual statistical digest, along the lines proposed for CET (see pp 30-33), and this will include operational information about programme output and use of technical facilities for each of the regional production centres. The procedures for collecting data for the annual statistical digest will be worked out in April-May, 1980, in consultation with CET and NEC. There are no plans at the moment for the pre-testing or formative evaluation of programmes, and this is an area which needs to be explored by a foreign technical consultant.

However, the lack of evaluation manpower within RCP will be a major constraint on any extensive programme of pre-testing or formative evaluation of individual programmes or series. In 1980, RCP expects to have a total of seven staff in the central office, nine in each of the four regional offices, and one in each provincial office, for all activities. Currently, one member of staff in the central office is responsible for evaluation, but only on a part-time basis, having a wide range of other responsibilities as well. One member of the Planning and Research Division of the Department of Non-Formal Education is also available, on a part-time basis, to assist with evaluation

activities. In each regional office, there is also one person with responsibility for evaluation activities, but this person also has a wide range of responsibilities, extending to other programmes as well as RCP's. It can be seen that there are in fact considerable resources scattered round the system, but these need to be co-ordinated within a more coherent framework. What is clear is that, given the need for obtaining information for summative evaluation, management and planning purposes, one person in the central office should be responsible for the development and implementation of evaluation activities, on a full-time basis. It should be left to RCP to decide whether this post should be created from among existing staff, seconded on a full-time basis from the Planning and Research Division, or created as an additional post to those sought for 1980. However this is organised, it is clear that there will be an on-going need for one full-time evaluator within RCP's central office.

Thus the following technical assistance is required, for formative evaluation purposes (See "Summative Evaluation" for further recommendations regarding foreign technical assistance.)

	LENGTH	DATES	DUTIES
1.	3 months (formative)	April-June, 1980	a. To assist RCP develop an effective system of feedback, through regional and provincial centres, including the collection of reliable and accurate information on listening figures, learners' and organisers' ratings of the programmes, enrolments and drop-out rates, and suitable times for radio transmissions. b. To develop procedures for the collection of data required for an annual statistical digest of output, expenditure and operation of the radio component of RCP, in conjunction with CET and NEC. c. To explore possibilities for the pre-testing or formative evaluation of individual programmes or series. d. to assist with the development of a workshop on evaluation for RCP central and regional staff. e. to assist with the development of a training programme on evaluation for regional staff.

	LENGTH	DATES	DUTIES
2.	2 months (formative)	May-June, 1981	a. To analyse the results and effectiveness of feedback systems devised the previous year and to revise if necessary. b. To check on any difficulties arising from the collection of data on the annual statistical digest, and to suggest amendments, if necessary. c. To assist NEC, by providing, summarising or collecting data required for the mid-term summative evaluation.

The estimated costs of running the workshop on evaluation for RCP staff (which will come from RCP's regular budget) is as follows:

		Baht
1.	Consultant's travelling costs	9,000
2.	Equipment (papers)	2,000
3.	Per diem for overtime for staff participating in workshop	2,000
4.	Per diem and travelling expenses for workshop participants	120,000
	Total	133,000

In-Service Teacher Training Department (TTD)

TTD already has available enrolment figures for its three types of courses. In 1980 TTD anticipates approximately 53,000 course enrolments altogether, building up to 77,000 by 1984. In 1980, it anticipates a staff of 20 in the head office, building up to 53 by 1984, of whom 10 will be producers, at a maximum. By 1984, it is proposed to broadcast a total of 12 hours a week of TTD programmes. Scripts will be prepared by script-writers (teacher trainers), and produced in CET's new production centre.

TTD has requested similar base-line data to that produced for CET, collected in similar ways:

a. An annual survey of listeners. TTD has suggested the distribution of questionnaires to individual teachers enrolled in TTD courses through the changwads, who have a register of enrolled students, and then through the headmasters of the schools: in other words, a census of 53,000 teachers, rising to 77,000 by 1984. This will need to be planned very carefully, in conjunction with CET's in-school evaluation team, to avoid confusion and overlap. In particular, while the in-school radio survey will require only one questionnaire to every school, (and hence administration is very simple) the in-service teacher training survey will require several questionnaires to be delivered to some schools, and none to others. Also, the cost of such a survey would not be less than 75,000 baht (1979 prices) at the beginning, and rising each year with the number of enrolments. A full census of TTD enrolments - in addition to the school radio survey - would also place considerable pressure on the Bureau of Testing Services, who would presumably be expected to process the data. It would then make much more sense to carry out a sample of schools, possibly by choosing one out of every three changwads from each region, for the TTD survey. The TTD survey should also seek to relate quality of transmission times to listening figures. (A procedure for separating the influence of the quality of the transmission time from the other factors influencing listening figures - such as the quality of the programme material - has been developed by Grundin[9]). TTD's report on the survey should be sent to NEC.

The allocation of transmission times on the new network to the various adult education sectors - RCP, TTD and STU - will be a major problem for the Programming Committee. Each of these sections will want the best evening transmission times. Accurate, regular figures on the numbers listening, or on the percentage of the target audience listening, could be one factor which the Programming Committee may like to take into consideration when making time allocations each year.

b. Annual statistical digest. TTD have also agreed in principle to collect an annual digest of statistics, along the lines proposed for CET. This should be designed in conjunction with CET, RCP, and NEC.

TTD cannot find adequate resources for the survey in 1980-81, since their budget for that year is now already committed. However, TTD has agreed to carry out a survey towards the end of the school year 1981-1982, which should enable a base-line to be established before productions from the new production centre are

transmitted. The annual statistical digest though will be developed in 1980, and TTD have agreed to set aside two-months for this purpose in 1980, and six man-months for this and the survey in 1981. In 1982, TTD will attempt to appoint one full-time evaluator, another in 1983, and a third in 1984. This should then enable resources to be available for formative evaluation of individual programmes and series, as well as for the survey and annual statistical digest.

No resources have been provided under the UNDP/Thai government agreement for foreign consultants in evaluation. However, it is clear that TTD is a sector which requires considerable technical assistance in several areas, including evaluation. It will be particularly important to look at the methods of radio production and design proposed by TTD, with its emphasis on high rates of production for producers, working from scripts prepared by people untrained in the use of radio production techniques.

Consequently, it is recommended that at least three man-months of foreign consultancy is negotiated for TTD for formative evaluation. This might be as part of a new package of technical assistance specially created for TTD, or as an additional amount to the current UNDP/Thai government agreement, or from any time from the consultancies already agreed that are not taken up by the Ministry of Education. Technical assistance on formative evaluation could still be useful to TTD, even from 1981. If none of these options is possible, then the foreign consultant proposed for CET and RCP should be allowed to devote some time to assisting TTD with its evaluation plans.

Conclusions

It is accepted that proposals for monitoring and revising programmes in RCP and TTD are at this stage sketchy. This is to some extent inevitable, since in neither areas are there yet clear plans about production, staffing, policy for radio programmes, or the systems planned to support the radio programmes. It will be the task of the permanent Thai staff and the foreign consultants recruited to assist these sections to produce more specific plans for formative evaluation. The mission however has made these sections more aware of what will be needed to provide formative evaluations both in terms of staff and resources, and there is still sufficient time for these sections to evolve adequate plans for formative evaluation.

5. SUMMATIVE EVALUATION

Tasks for Summative Evaluation

Summative evaluation is basically an attempt to discover what benefits have been gained from an investment of money and manpower into a project or system, and whether the benefits were worth that investment. At least three justifications for carrying out summative evaluation of the radio component of the fifth education project could be put forward:

(a) to learn from experience, to assist future decisions about other investment in aid programmes. For instance, given its limited resources, was it after all a good idea for the World Bank to invest in an educational radio system? Does the Thailand project have lessons which should be taken into consideration when deciding on other projects? Although the information will be used to inform future decision-making, and while the World Bank no doubt will continue to maintain an interest in future developments of the Thailand project, summative evaluation in this sense is essentially a "looking back" exercise. "This is what the project has achieved. Is it what we expected? Has it been worth the investment?"

(b) to learn from experience, to decide what to do about the system that has been established. The Thai government is likely to be more interested in this than the previous question. It will have an educational radio system, a production centre, a transmission network, "permanent" civil servants working in the system. It is committed to loan repayments, and it will not be able to avoid these by closing down the system. Summative evaluation could assist the Thai Government in deciding on whether to increase or reduce expenditure on the project as a whole, whether or not to transfer resources from one sector to another, whether to close down some sectors altogether, or to begin new projects, using the existing technical resources. To make such decisions, it will need to look back over the past six years, but it is essentially a "looking forward" exercise. "This is what the project has achieved. Should we go on spending Thai money on it at the current level? What

changes or developments do we want to make?"

(c) "good housekeeping." Summative evaluation allows the World Bank to have a reliable record of how the money is spent, of genuine difficulties encountered which prevented some targets being met, of benefits which it can use to justify the investment. It allows the Thai government a chance to identify major weaknesses, or to change course, to ensure that government money is being spent wisely. The knowledge that there will be a summative evaluation provides a stimulus to the individual projects to meet their targets, to overcome difficulties, or at least to bring to the attention of others those difficulties beyond their control.

Because summative evaluation is required for different purposes, slightly different approaches to carrying out summative evaluation will be required to meet each of the different purposes. This will affect not so much the basic collection of information, but the way such information will be analysed and interpreted. The aim of this evaluation plan then is to collect information in such a way that it can be used for all three purposes.

There are basically four elements of a satisfactory summative evaluation:

(a) Analyses of Output or Benefits. What did the project achieve? Did it achieve what it set out to achieve? Were there unforeseen benefits from the project? Means of measuring the benefits gained from the radio component of the fifth education project will be discussed in more detail later, but a general point needs to be made about educational radio. In practice, it is usually very difficult to measure the extent to which any benefits observed are due strictly to the radio component, or due to the other components (manuals, interest groups) set up to support the radio component, or due to other factors completely independent of the radio project. Radio is usually a very small part of any learning experience. Sometimes it is possible to mount studies

which compare performance of those receiving radio education from those who do not, (such as in the summative evaluation of BSPP Maths - see pp. 5-6), but usually this can be done on only a small scale, since such studies require careful matching of the two groups. However, when carrying out a summative evaluation on the scale of the fifth education project, where the aim is to cover more or less the whole country with a radio system, such carefully controlled experiments become either highly artifical, ignoring many important variables, or excessively expensive to mount.

In the end, one is forced into observing exactly what happens, in the project as a whole. The philosophy is basically that if the benefits fall substantially below what was expected, the summative evaluation should attempt to explain <u>why</u> this happened. If there are benefits, it will be necessary to try and explain whether these benefits were strictly due to radio or not. In either case, summative evaluation will be more valuable if it can identify underlying <u>reasons</u> for achieving - or failing to achieve - benefits. This will make generalisations to other projects more valid, will indicate to the Government where action is necessary to improve the system, and usually it is psychologically less damaging to project workers if reasons for success or failure in their projects are understood, since often the factors which lead to success or failure are not always within the control of those immediately responsible for individual projects.

However, to penetrate to the underlying <u>reasons</u> for achieving or failing to achieve benefits requires a deep understanding of the project itself. This is less likely to come from a sudden, massive summative evaluation exercise at the end of a project, but through a steady build-up of information and knowledge about the project as it develops. At the same time, for summative evaluation it is particularly important to maintain objectivity and avoid bias.

(b) Analyses of Costs. How much did the project actually cost as a whole, including Thai government contributions, and contributions from other agencies such as UNDP? Where did the money go? Was it primarily on transmitters and buildings, or on staff to run the system, or on materials to support the system? Which of the projects absorbed the most money? If expenditure was greater than anticipated, what were the causes of this?

Such information, from the beginning of a project, will be particularly valuable. There have been few really thorough attempts to look at the way educational media projects have actually absorbed monies from various sources. Such an exercise, of course, would not be an investigation into financial probity, but an attempt to identify those areas which require heavy financing in order to achieve their objectives. Most cost analyses of educational media projects in the past have been based on either projections of costs into the future, or on sudden, retrospective analyses of costs from a fixed point in time. The only thing one can be sure about with regard to cost projections into the future is that they will be based on large assumptions which nearly always turn out to be wrong - there are too many uncertainties. With regard to retroactive analyses, usually much of the information has not been available in a suitable form for summative evaluation purposes. Often, such analyses have had to concentrate on international aid contributions, and have not been able to analyse accurately the national cost contributions. So again, large assumptions have had to be made.

The World Bank, by requiring mid-term and summative evaluation, UNDP/UNESCO, by providing technical assistance for a master evaluation plan before project implementation, and the Thai government, through its commitment to the idea of evaluating and improving the project, have together provided a unique opportunity to monitor accurately the cost implications of the fifth education project. This will benefit not only other agencies or governments contemplating educational media projects, but will provide the Thai government with extremely useful budgeting information to assist its policy-making.

A further reason why cost analyses will be extremely valuable is the unusual cost structure of educational media projects. Generally, in education a higher proportion of costs goes into recurrent expenditure, which has to be found every year, such as teachers' salaries, rather than into capital costs (school buildings, etc.) which tend to be "once-off". Costs are also roughly related in conventional education to the numbers of people receiving education - the more children being educated, the higher the recurrent and capital expenditure (more teachers, more books, more schools). With educational radio, though, capital costs for a national network and new production centre are likely to constiute a much higher proportion of the costs than recurrent expenditure (production costs). Radio costs are also less affected by the numbers receiving education through radio. The cost of production and transmission is the same, whether a programme is heard by one person or a million. Hence economically it makes sense to reach as many people as possible through radio. At the same time, there are variable costs associated with numbers, even when radio is used, such as costs for support materials, local organisers, etc. There seems to be indications from other media projects that support services are essential to reinforce learning from radio, but these costs may well exceed the recurrent costs associated with radio production and distribution. This project will enable much more light to be thrown on these issues, but they also require a very careful and sophisticated approach to cost analyses, on the part of the evaluators.

(c) Analyses of management and operations. Did the system operate as planned? Were there delays on construction, breakdown in transmissions, a failure to produce as many programmes as anticipated? Was the system managed properly? Were staff sufficiently trained? Were there enough resources for maintenance or for support materials? If things went wrong, why did they go wrong? What factors could go wrong, without serious, immediate, consequences, and what factors are crucial for the system to work?

Previous summative evaluations of educational media projects have been weak on explanation for success or failure of projects, as if the factors which make educational media "good" or "bad" are inherent in the media themselves, and are independent of the way they are used or managed. An understanding of the reasons for success or failure may be less important for international agencies, who have to move on to decisions on other projects, and hence require more urgently clear guidelines on whether to invest or not, ("go/no-go decisions") but for national governments, an understanding of reasons for success or failure is essential. National governments are left with the system and the loan repayments. It is thus crucial for the Thai government to identify what may be going wrong, and to do something about it, in order to get the most benefit from something they are already committed to. This requires accurate information about the operation of the system, both in technical terms (reliability of transmission, production) and in human terms (the quality of programmes and support materials, policies for the use of radio, etc.). Special efforts must therefore be made, once again, to build up, over time, an accurate picture of how the system is actually operating, and where and why difficulties are occurring.

(d) Relating Costs, Benefits, and Management. How do we know whether the benefits are worth the costs involved? To what extent is failure or success due to the way the system has been used or managed, and how much was due to the nature of educational radio itself?

This is perhaps the most difficult part of summative evaluation, for several reasons:

i. There are no universally accepted formulae or techniques for relating educational benefits and costs. Although some economists have tried to fix a financial figure on educational benefits, many educators have at best found such exercises of doubtful validity.

ii. The unusual cost structure of educational radio, already referred to, is not always understood by educational economists. For

instance, the marginal use of existing facilities, already in existence for other educational purposes, but on to which radio is [illegible], has often not been appreciated in cost-benefit analyses of educational radio.

iii. Different organisations interested in summative evaluation (in particular the World Bank and the Thai Government) will require different approaches to an analysis of cost-effectiveness.

iv. Despite the comparatively large overall cost of the system, the amount of radio contact with any individual is likely to be quite small, in the context of all the learning experiences available to an individual. In other words, how much would one expect to get from an investment of, for example, US25¢ per learner per year? This makes the measurement of the contribution of radio, as distinct from other learning experiences, extremely difficult to isolate.

v. There is a diversity of views amongst educational economists about the kinds of assumptions one should make about costing education, dependent on the economic theory or ideology held by each economist.

vi. There are very few precedents of summative evaluation of educational radio projects - certainly not enough to suggest a method of summative evaluation which is unquestionably superior to any other.

Given then all these factors, it would seem that the most practical approach is to avoid an analysis which attempts to convert to a common base costs and benefits, but instead to collect information on costs, benefits, and management as separate elements, as accurately, comprehensively and concisely as possible. The final analysis of whether or not the project has been worthwhile, or should be continued or modified, should be left to the personal judgement of those in the different organisations with an interest in the summative evaluation: the politicians, international organisations, educators who are responsible for decision-making. It is they who should make the interpretation of whether or not the benefits justify the costs. If academic or professional evaluators want to take the basic summative evaluation data and rework it to suit their own theoretical or

methodological framework they should be free to do so, but in the end, summative evaluation has to be based on the values held by those making the judgements. Summative evaluation is, in the final analysis, a subjective judgement. The function of those responsible for planning and implementing the summative evaluation is to do their best to ensure that such subjective judgements are based on as reliable and as accurate information as possible on what the project has achieved, and how much it is costing, but not to make the judgements themselves.

Resources and Responsibilities for Summative Evaluation

On a project as large as the fifth education project, full summative evaluation of all the components could be a very large-scale task. The National Education Commission of the Prime Minister's Office has been given (and accepted) formal responsibility for the summative evaluation of the whole fifth education project. This master plan however is limited to summative evaluation of only the radio component. Thus NEC will need to develop its own plans for the evaluation of the other components (Area Vocational Schools, Community Secondary Schools, Civil Service Training Centre, School Mapping studies, and the Centre for Educational Administrators). It is important then to consider the resource implications for NEC of carrying out summative evaluation.

There is no budget line for evaluation in the fifth education project, and any large-scale expenditure on summative evaluation from the project could be achieved only by using unallocated funds. However, there is some anxiety in Thai circles to avoid large-scale expenditure on evaluation from unallocated funds, since it is believed that these will be required in full to meet additional costs resulting from rates of inflation and construction costs higher than those allowed for in the agreement.

NEC has a full-time staff of around 150, but monitoring the fifth education project is seen by the Secretary-General of NEC as being only a small part of its work. At the time of the mission, NEC was proposing

to allocate two or three of its full-time staff, on a part-time basis, for summative evaluation purposes, to be assisted at the appropriate times by external Thai consultants on short-term contracts. (This is the usual way in which NEC works). The Secretary-General was aware that NEC was inexperienced in carrying out summative evaluation activities in educational media, but welcomed the opportunity the project gave to develop such experience. In response to a request about funds available for evaluation, NEC proposed an expenditure of around US $26,000 (520,000 baht), to be found from unallocated funds from the fifth education project.

Originally, it had been agreed that part of the loan agreement would cover foreign technical assistance. Under this arrangement, CET and NEC had agreed that up to 12 months' of the technical assistance originally allocated to CET would be made available to NEC for summative evaluation purposes. However, the UNDP/Thai government agreement on technical assistance, which in fact provides a grant rather than a loan, and provides for a greater amount of technical assistance than originally planned in the loan agreement, now supercedes most of the arrangements for technical assistance provided in the World Bank agreement, and the monies originally allocated for technical assistance in that agreement are now largely unallocated. The UNDP/Thai government agreement provides for eight man-months of foreign technical assistance for CET, and three man-months for RCP, for summative evaluation purposes (in addition to the total of eleven months for formative evaluation purposes), although the total of 22 man-months for evaluation assistance can be used flexibly, within the whole evaluation area.

These then were the resources considered available for summative evaluation purposes at the start of the mission.

A Strategy for Summative Evaluation

The fifth education project is complex, with several components affecting various departments and sections within the Ministry of Education and other government areas. An effective summative evaluation

requires an overall view of the whole project. Also, the project will develop over a five-year period, requiring both mid-term and final summative evaluations, so continuity is also an important factor. Thus any plan for summative evaluation has to take account of the following factors:

1. Low resources for summative evaluation
2. Lack of experience in summative evaluation in NEC, and to need for training in summative evaluation procedures
3. Need for continuity in collection of data
4. Need for an overview of the whole project
5. Substantial provision for formative evaluation within CET, and to a lesser extent in RCP.

To deal with this situation, the following strategy is proposed:

1. Use of formative evaluation data for summative purposes. The plans for the collection of formative evaluation data have been drawn up in such a way that some of this information can be used for summative evaluation purposes. Each sector should provide NEC with a detailed, statistical report each year. NEC should monitor the design and analysis of the annual surveys and statistical digest carried out in each sector. CET, RCP, and TTD have all agreed to provide NEC with data of the kind listed on pp. 24-33 of this report. There are several advantages in this approach to summative evaluation:

a. the information being passed on to NEC is needed in any case for management purposes in each sector

b. each sector will be aware of how it is progressing, and will have some say in how the data should be interpreted; each sector will be able to suggest reasons for difficulties encountered

c. the collection of such information comes out of each sector's

regular budget, so it is no drain on NEC's resources

d. a comprehensive, detailed picture can be built up, sector by sector, over a period of time

e. trends can be spotted over the years, avoiding the limitations of a "snap-shot" effect of a summative evaluation in only the final year

f. NEC will be able to ensure reliability and accuracy in the collection of the data, and independence in the final interpretation of the data.

NEC should attempt to collect similar information from STU and other agencies using the new educational radio network.

2. Continuity of NEC staff involvement. It is recommended that NEC should allocate one of its full-time members of staff to be the main liaison person between NEC and each of the sectors, to co-ordinate summative evaluation procedures throughout the length of the project. The duties of this person would be as follows:

a. to monitor and approve the data collection procedures and analysis of data in each sector

b. to receive the annual reports from each sector, to prepare a summary for the whole project, under the headings suggested in pp 24-33, and to note trends from year to year

c. to suggest improvements to the methods used by each sector (related to summative evaluation), and to suggest additional studies to fill in gaps.

This will require a minimum commitment of approximately 2-3 man-months a year for such activities.

3. Allocation of NEC staff on a full-time basis for preparing mid-term and final summative evaluation studies. It is recommended that one of the full-time NEC members of staff (preferably the same person as in (2) above) should spend an additional three months (full-time) in 1982 to work on the mid-term summative evaluation, and 12 months full-time in 1985, to work on the final summative evaluation. In addition, one other person will be required on a full-time basis for 12 months during 1985, to assist with the final summative evaluation. (This person may or may not be a member of NEC's staff). These costs (as for (2) above) should come from NEC's regular budget.

4. Additional Studies for Summative Evaluation in 1985. It is proposed that NEC should organise during 1985 a series of studies to supplement and validate the data collected by the individual sectors. The exact nature of such studies will be more easily identified by NEC nearer to 1985, but two kinds of study are likely to be needed:

a. Field studies. All the individual projects (in-school radio, general educational radio, RCP programmes, TTD programmes) in fact will cover homogeneous communities. Thus, in any sizeable town or local community, there are likely to be schools, teachers, functional illiterates, those requiring some form of continuing education, even perhaps open university students. By carefully selecting a small number of different types of community, it should be possible through well-planned visits and meetings to collect valuable information about the impact of the educational radio services - whether or not people are aware of the services being provided, whether they actually use them, if they do, whether they value them, and what might be done to improve the services.

b. National Survey. While the field studies will provide an in-depth analysis of the impact of the radio component of the fifth education project in a few selected communities, it may be necessary to supplement this with a national survey in 1985. The need for this can be determined only in the light of the data built up from the formative evaluation activities over the years. If NEC is reasonably satisfied

that such information is providing an accurate and comprehensive picture of the use of the radio component on a national scale and sufficient evidence of learning gains or behaviour changes are forthcoming then no additional survey will be necessary. If however there are gaps, or doubts about the reliability of the information available, then it may be necessary to commission a national survey from the National Statistical Office. Such a decision should be made towards the end of 1984.

5. Allocation of funds for summative evaluation from the Technical Assistance heading in the loan agreement. To enable additional studies to be carried out by NEC, it is recommended that (in addition to the NEC staff already allocated under (2) and (3) above) a sum of US $25,990 should be made available to NEC for mid-term and final summative evaluation activities, as follows:

	US $
a. Technical assistance	
- 2 Thai consultants (part-time basis)	2,500
b. Professional services	
- committee	1,350
- working groups	1,440
c. Costs of materials	4,000
d. Travelling costs (for field-studies,etc.)	15,200
e. Costs for data analysis (computer time)	1,500
Total	25,990

This money should be found from the technical assistance line of the loan agreement. The use of money from this budget line has been approved in principle by a representative of the World Bank and by the Central Purchasing Unit.

6. Allocation of foreign technical assistance to summative evaluation. Of the 22 man-months set aside in the UNDP/Thai Government agreement for foreign consultancies for evaluation, five months have been allocated to CET, and another five months to RCP, for formative evaluation purposes. It is recommended that the remaining 12 man-months are set aside for summative evaluation purposes, as follows:

Foreign Technical Assistance: Summative Evaluation

	LENGTH	DATES	DUTIES
1.	3 months (from CET)	April-June 1980	To develop, in conjunction with the National Education Commission, detailed procedures for the mid-term and final summative evaluation of the radio component of the fifth education project, working within the master evaluation framework already agreed.
2.	1 month (from CET)	June 1982	To assist the National Education Commission to collect, analyse, and interpret mid-term evaluation data.
3.	8 months (5 from CET; 3 from RCP)	May-December 1985	To assist the National Education Commission in collecting new, and analysing existing, summative evaluation data for the final summative evaluation.

7. Provision of training in summative evaluation for NEC staff. NEC suggested the use of foreign fellowship for one member of staff to spend three months at a foreign institution, and of two short study tours of two to three weeks, for three people to East Asian countries, to study summative evaluation procedures. There is no provision in the UNDP/Thai Government agreement for assistance to NEC staff (or for any other) for such purposes. Resources for such purposes then would presumably have to come from the loan agreement.

Provided that such resources are available, a case can be made for the use of a foreign fellowship for the NEC member of staff listed in (2) above to spend two separate periods of three months in two different locations, to study summative evaluation procedures. The first visit, in 1981, could be to an institution, such as Stanford University, or even the World Bank itself, where staff have experience of "look-back" summative evaluation exercises (see p. 65). The purpose of the exercise would be to familiarise the NEC staff member with some of the basic assumptions made by economists, and other methods of analysis, when evaluating educational media projects, and some of the limitations of such assumptions. The second visit, in 1983, could be to an institution, such as the Open University, in the United Kingdom, where staff have experience of "look-forward" summative evaluation exercises. The purpose of this exercise would be to familiarise the NEC staff member with the basic assumptions and methods of analysis used by evaluators and planners, when deciding whether to continue, expand or contract activities in educational media once investments have already been made. This fellowship should be in addition to the two to three months a year required for summative evaluation activities.

The short study tour is more problematic. The value of such a tour will depend very much on the extent to which the projects being visited have developed summative evaluation procedures, and their relevance to the Thai project. Countries with educational radio projects which are under consideration are Indonesia, the Philippines and Korea. If such projects do have experience in developing and carrying out summative evaluation proceedures, a study tour may be justified for two staff

members from NEC (the member in (2) above responsible for on-going developments of summative evaluation, and the head of the non-formal education section in NEC). The third person suggested for the tour was from CET, but CET cannot spare staff for study tours of this kind. Very careful preparation will be needed to make sure that such a study tour is worthwhile, and NEC should check with UNESCO and the World Bank that there are projects in East Asia with worthwhile and relevant experience in the summative evaluation of educational radio projects.

An international conference is planned for the end of 1980, in Ahmedabad, India, on research and evaluation for decision-making in educational media. It is recommended that one evaluator at least from NEC, and one from CET, should attend this conference.

The Mid-Term Evaluation

The mid-term evaluation has to be completed by December 31st, 1982. However, it is unlikely that the new production centre will be ready before the end of 1981. It will be surprising if many programmes transmitted in the 1982-83 school year will have been produced in the new centre, even if things go according to plan. Also, Phase 1 of the new network is not likely to be available until the school year 1982-83.

This creates some problems for a mid-term evaluation. The annual surveys for formative evaluation have to be carried out at the end of the school year (around January), so data on the impact of Phase 1 of the new network will not be available from this source until after the deadline for the mid-term evaluation. A special survey could be mounted in the early part of the school year (around July or August, 1982), but there are obvious difficulties in doing this. Any delay whatsoever in construction and operation of the new network will make such a survey pointless. There will be few programmes produced from the new studios transmitted at that time, and very little time during the year for the programmes to have had any impact. Such a survey would also interfere with the plans for formative evaluation. In essence, the mid-term

evaluation comes too early for any reliable measures of impact to be available.

On what then should the mid-term evaluation concentrate? The main interest should be on operational matters. Has the new production centre been completed on schedule? Is Phase I of the new network fully operational? If there are delays, what are the reasons, and what will be realistic target dates for completion? Has recruitment of staff in the various sectors kept to plan? What difficulties have arisen here? Are programme materials, publicity and support services well under preparation in each sector? Do the various sectors have clear targets or objectives? Has it been possible to implement the first part of the evaluation plan?

There will be some evaluation data available. The mid-term evaluation could include base-line information before the new network and studios are operational - how many schools are using each series, enrolments for RCP, how many programmes are being produced each year for each sector, as at January, 1982. There will also be some evaluation of policies available. There will have been a summative evaluation of BSPP Maths, Grade 2 and 3 programmes, evaluation of programmes on Thai and Living Experiences (Grade 3), and evaluation of a whole series of 16 enrichment programmes. There will have been a decision on in-school radio policy regarding radio for direct teaching, enrichment, or intergration. These studies can be summarised, and included in the mid-term evaluation report.

However, the main thrust of the mid-term evaluation will most usefully be on operational matters, and in particular, on the identification of reasons for delays. The mid-term evaluation should be carried out by the NEC staff member responsible for liaison with the various projects, during the six months April-September, 1982, assisted by a foreign consultant during June, and by other NEC staff who can be made available. A report should be prepared by NEC, and circulated during September, 1982, to the various sectors concerned for comment,

then, after amendment, submitted to the World Bank at the end of the year. It is strongly recommended that before completion of the report, a meeting should be held under the chairmanship of the Secretary-General of NEC, with all the sectors concerned, in October 1982, for the various sectors to discuss the draft report and to report on the actions planned to remedy delays or overcome difficulties mentioned in the report. These reactions should be incorporated in the final draft submitted to the World Bank.

These plans for the mid-term evaluation are tentative, and should be refined or amended by the foreign consultant for summative evaluation, in conjunction with NEC, during 1980.

The Final Summative Evaluation

Detailed plans for the final summative evaluation should be worked out during April-June, 1980, by NEC, in conjunction with the foreign consultant. However, it is likely that such plans will need to develop further the following points:

1. Measuring benefits or outputs

The main strategy here will be comparisons between targets set at the beginning of the project in each sector, and actual achievement. This would be done in the following way:

(a) Identification of objectives or targets within each sector. Most sectors have clear targets for enrolments, in terms of numbers, intended coverage of different parts of the country, and the type of people (farmers, poor, illiterates, etc.) that they wish to enrol. In some areas, such as RCP, certain required behavioural changes - level of literacy, becoming "Khit Pen", changes in community social development - can also be specified in advance. During 1980, realistic targets or objectives for each sector should be identified, and subsequent changes in these targets (and the reasons for the changes) should be monitored year by year. Special attention should be paid to target support services

(i.e. intended print support material, local organisers, etc.)

(b) Analysis of levels of production and transmission - does the actual utilisation of the network and production centre match the targets already set? Was it necessary to increase production in some areas and reduce production in others - and why? Are the programmes being transmitted at times suitable for the various target audiences? If not, why not?

(c) Analysis of actual provision of support services - has it been possible to recruit suitable local organisers? Are the support print materials suitable and available?

(d) Measurement of enrolments, drop-outs, extent of demographic coverage for each project. Particular attention should be paid to persistence of enrolment - once attracted, do they stay?

(e) Levels of listening - how much is participation (either initial recruitment, or continuing study) due to the radio programmes themselves? What do listeners think of the programmes? What do specialists think of the programmes? Are there differences within sectors in the levels of listening for different series? Is there evidence of sectors learning how to use radio better (i.e. trends in improved ratings over the years, etc.)?

(f) Specific studies or examples of learning or behaviour changes associated with the radio projects. What evidence has been produced of learning gains or behaviour changes as a result of the various projects?

(g) Identification of reasons or explanations for targets being missed, and of problems encountered by the various projects.

During the detailed planning of the final summative evaluation in 1980, an attempt should be made to check the extent to which the sectors themselves or the formative evaluation procedures in each sector will provide such information. If there are gaps, it may be necessary to set

up a series of studies during 1981, to provide additional base-line data. Similarly, it may be necessary during 1985 to repeat such studies.

2. Cost Analyses

The basic cost analyses for each sector have already been suggested on pp. 31-32. In addition to cost data for each sector, however, total costs for the system have to be identifed each year. This will need to be broken down in a number of ways:

(a) Source of finance: Thai Government money, channelled through regular budgets; international grants (e.g. UNDP foreign technical assistance); money raised directly from users (e.g. purchase of books, enrolment fees).

(b) Overall project costs not directly attributable to individual sectors. Repayment of capitla and of the loan; running costs of the production centre and transmission network, general administrative costs, not related to specific projects. These may need to be broken down into capital costs and recurrent costs.

(c) Specific sector costs. Where costs are directly attributable to individual projects costs should be analysed by each project within each sector. For instance, costs within CET should be broken down between in-school radio and general educational broadcasting, and within in-school radio, between programme series.

3. Interpretation of Costs and Benefits and Analysis of Data

It has already been pointed out that final interpretation of the data should be left to policy-makers. However, there are several important areas where assumptions or strategies will have to be made by the NEC evaluation team.

(a) How to handle capital costs and interest rates. Should capital costs be annualised (i.e. spread equally over a number of years)? If

so, over how many years? The six years of the project? The life-[illegible] of the equipment (estimated to be around 40 years, for the network)? Should allowance be made for the special low rate of interest being paid, or should the analysis look at what the cost would have been had commercial lending interest rates been applied? Should capital and interest charges be assigned to individual projects? Should overheads be assigned to individual projects? Some would argue that fixed costs should be assigned to projects in proportion to the extent to which they use the system. (In other words, if in-school radio uses 30% of the network, 30% of the capital and recurrent costs of the network should be assigned to in-school radio.) Others would argue that such an analysis ignores the possibility of change and development, and that total project costs which are incurred irrespective of what the system is actually used for should be kept separate from the additional costs actually incurred in running an individual section of the project. (In this case, only the costs directly attributable to in-school radio - set maintenance costs, producers salaries, support materials, etc. would be assigned to in-school radio, and not the capital costs of the transmission network).

Once again, the answer to these questions will depend on the target audience. Different people (World Bank policy makers, or Thai Ministers) will have different perspectives. The kind of analysis required will depend on the decisions which have to be made. What is important however is that costs are collected in such a way that they can be broken down and added together in various ways, in a consistent manner.

However, it will be not only in the area of cost analysis that problems will arise. Identifying the benefit from the various projects is likely to be controversial as well. Therefore the suggestion by RCP that there should be two workshops for RCP staff, one early in the project, to discuss evaluation methodology, and one at the end, to discuss evaluation results, is an idea that might well be extended to other projects.

With regard to summative evaluation, it would be particularly valuable if NEC could arrange two workshops, one in 1980, and one early in 1985, to which World Bank staff, Thai government officials, and two or three evaluators from other countries, could be invited, to discuss specifically the most appropriate methods of cost analysis for the project. This is not because it is impossible to suggest an appropriate method. There are though various approaches which could be adopted, and it is important that Thai officials are aware of these differences, and can exercise some influence over the method of analysis which will be of most value to them.

No attempt has been made to identify funds for such workshops (which should be additional to the one proposed by RCP), but NEC may wish to take responsibility for securing funds and arranging such workshops.

SUMMARY OF RECOMMENDATIONS

	Recommendation	By which (latest) date	Source of funding	Strength of recommendation
CET				
1.	A permanent, in-service evaluation unit of five full-time posts should be established (p 18).	January 1982	CET regular budget	Essential
2.	A temporary evaluator should be appointed for 12 months (p.18)	January 1980	CET regular budget	Strongly recommended
3.	A Thai national specialist in evaluation should be appointed for 12 months (p.18)	April 1980	UNDP	Strongly recommended
4.	The evaluation team should at a minimum concentrate on the following three areas of work (in order of priority):			
	a. Establishment of base-line data (Survey and statistical digest) (pp.24-33).	1980-1985	CET regular budget	Essential
	b. Evaluation of BSPP (Maths) (pp. 33-34)	1980-1981	CET regular budget/ IMSSS, Stanford	Strongly recommended
	c. Formative evaluation of radio for supporting the curriculum (pp. 34-43)	1980-1982 (perhaps beyond)	CET regular budget	Strongly recommended
5.	The evaluation team should evaluate BSPP (Thai), if CET decide to use radio for direct teaching of Thai (pp. 43-46)	1981-1982	CET regular budget	Desirable

	Recommendation	By which (latest) date	Source of funding	Strength of recommendation
CET (cont.)				
6.	The head of the evaluation team must be directly responsible to, and report to, the Director of CET. (p. 48).	-	-	Essential
7.	The head of the evaluation team should be a member of any senior CET management group (p. 48).	-	-	Strongly recommended
8.	The evaluators should be located within the in-school radio section (p.48)	-	-	Desirable
9.	Producers must have sufficient time to be involved with programme evaluation activities (p.48)	-	-	Essential
10.	Regular seminars should be held between evaluation staff in CET and other sectors (p. 49).	-	-	Desirable
11.	Foreign consultants in formative evaluation are required as follows (pp. 53-54).			
	(a)	April-June 1980	UNDP	Desirable
	(b)	April-May 1980	UNDP	Desirable

	Recommendation	By which (latest) date	Source of funding	Strength of recommendation
CET (cont.)				
12.	A budget for evaluation activities (separate from production), of between 100,000-150,000 baht a year will be necessary (p. 55)	1980-1985	CET regular budget	Essential
13.	NSO should be asked to carry out an annual survey of listening for the general educational broadcasting section (pp. 57-58).	June 1981	NSO	Strongly recommended
14.	The General educational broadcasting section should set up a regular feedback panel (p.58).	June 1982	CET regular budget	Desirable
15.	A post for an evaluator should be set aside in the general educational broadcasting section (pp. 58-59).	June 1982	CET regular budget	Desirable
RCP				
16.	RCP should organise two workshops on evaluation (p. 60)	1980 1985	RCP regular budget	Strongly recommended
17.	RCP will collect base-line data similar to that for in-school radio, in consultation with CET and NEC (p. 60).	1980-85	RCP regular budget	Essential

	Recommendation	By which (latest) date	Source of funding	Strength of recommendation
RCP (cont.)				
18.	RCP should appoint one full-time evaluator in the central office (pp. 60-61).	April 1980	RCP regular budget	Essential
19.	Foreign consultants in formative evaluation are required as follows (pp. 61-62)			
	(a)	April-June 1980	UNDP	Strongly recommended
	(b)	May-June 1981	UNDP	
20.	A budget of 133,000 baht will be required for each work-shop (p.62).	1980 1985	RCP regular budget	Strongly recommended
TTD				
21.	TTD will collect base-line data similar to that for in-school radio, in consultation with CET and NEC (p. 63).	January 1982 - 1985	TTD regular budget	Essential
22.	TTD will provide two man-months for evaluation in 1980, six man-months in 1981, and one full-time evaluator from 1982 onwards (p.64).	1980-1985	TTD regular budget	Essential

	Recommendation	By which (latest) date	Source of funding	Strength of recommendation
TTD (cont.)				
23.	Three man-months of foreign consultancy in formative evaluation is required (p.64)	1981	?	Essential
NEC				
24.	NEC should moniter and supplement the collection of information on costs, benefits, and management, as separate elements (p.65-72).	1980-81	NEC regular budget	Essential
25.	Much of the formative evaluation data should be used for summative evaluation; each sector should provide NEC with a detailed, statistical report of its activities each year (p.74)	1980-85	Regular budgets of each sector	Essential
26.	NEC should allocate one of its full-time staff to be the main liaison person between NEC and each of the sectors, spending a minimum of two to three months each year on summative evaluation activities (p.75).	1980-85	NEC regular budget	Essential

NEC (cont.)	Recommendation	By which (latest) date	Source of funding	Strength of recommendation
27.	An additional three months of time should be spent by the NEC member of staff referred to in (26) above on the mid-term summative evaluation (p.76).	1982	NEC regular budget	Essential
28.	The NEC member of staff referred to in (26) and (27) above should spend 12 months full-time on the final summative evaluation (p.76).	1985	NEC regular budget	Essential
29.	Additional summative evaluation studies may need to be organised by NEC; (p.76).	1982 1985	Unallocated funds from World Bank loan (see 30 below)	Desirable
30.	A sum of 520,000 baht should be allocated to NEC for summative evaluation activities (p.77).	1982 1985	Unallocated funds from World Bank loan	Desirable
31.	Foreign consultants for summative evaluation are required as follows: (p.78)			
	(a)	April-June 1980	UNDP	Essential
	(b)	June 1982	UNDP	Desirable
	(c)	May-December 1985	UNDP	Essential

	Recommendation	By which (latest) date	Source of funding	Strength of recommendation
NEC (cont.)				
32.	Foreign fellowship of six months in total should be made available for NEC members of staff referred to in (26) above to study summative evaluation methods (p.79).	1981 1983	Technical assistance head in World Bank Loan	Desirable
33.	Foreign study tour for two persons to educational radio projects in East Asia where summative evaluation procedures are being developed in recommended, if such projects are relevant.	1981	Technical assistance head in World Bank Loan	Desirable
34.	Mid-term summative evaluation should concentrate mainly on operational matters (pp.80-81)	April-Sept 1982	NEC regular budget	Strongly recommended
35.	Two workshops on summative evaluation should be organised by NEC (pp.85-86).	1980 1985	?	Strongly recommended

REFERENCES

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6. SALOMON, G. — "Shape, not only content: how media Symbols partake in the development of abilities", in WARTELLA, E. (ed.) Children Communicating: Media and Development of Thought, Speech, Understanding. Sage Annual Review of Communication Research, Vol. 7. London, 1979.

7. JACQUINOT, G. — Image et Pédagogie, PUF, Paris, 1977.

8. BATES, A.W. — Towards a theoretical framework for a study of learning from television, Open University, Milton Keynes, 1979.

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APPENDIX 1

METHOD USED TO PREPARE MASTER EVALUATION PLAN

The groundwork for this mission was laid during an earlier UNESCO project, in 1973-74, which resulted in the report "Educational Media for Thailand". I was a member of that UNESCO team, and during a four-month period, I was able to familiarise myself with various aspects of the educational system in Thailand. During this earlier mission, I prepared a manual on evaluation for CET, related to the proposed project, and based on the facilities available at that time.

For this project, I revisted Bangkok for four weeks in October/ November, 1979, after briefing at UNESCO headquarters in Paris. I had available, on reaching Thailand, the Thai Government's proposal for a fifth education project, the World Bank Staff Appraisal Report, and the UNDP/ UNESCO project document on technical assistance for the radio component of the fifth education project. More importantly, though, the Ministry of Education provided me with two Thai counterparts, one from CET itself, and one from the Division of Planning and Research, Department of Educational Techniques. Both these counterparts were specialists in research and evaluation and were available throughout the length of my stay. Not only were they readily accessible, they were also able and hard-working, and provided invaluable assistance in the preparation of the master plan. The Director of CET herself was also always readily available, and fully co-operative and supportive of the mission.

At the end of the first week, after reading the documents listed above and talking to the couterparts and the Director of CET, I drew up an outline of what the plan might look like. I then arranged preliminary meetings with representatives from NEC, RCP, and TTD. At these meetings I outlined the purpose of the mission, the limits of what I could do with regard to evaluation plans for each of these sectors, and requested information on their own plans for evaluation, in particular manpower and budgetary requirements, and requirements for foreign technical assistance. This information was needed by the end of the third week of

the project. The outline plan was also discussed at each of these meetings.

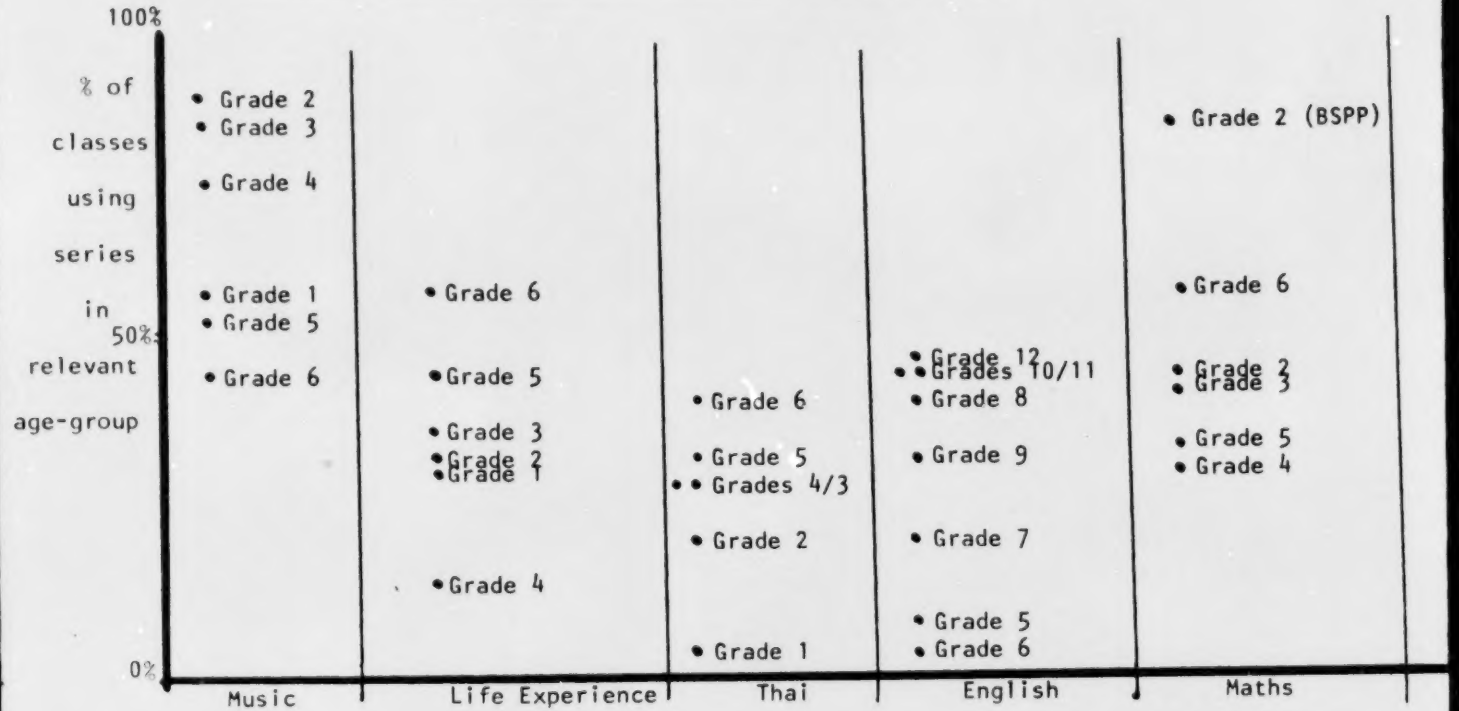
The next two weeks were then spent primarily drafting proposals for evaluation activities in CET. The procedure adopted was first to discuss verbally each part of the outline plan with the counterparts, then to prepare a first draft, which was usually read and agreed or amended, after discussion, by the Director of CET and the two counterparts. By this procedure, all the plans regarding evaluation for CET (pp. 12-59) were agreed before leaving Thailand.

The last week of the mission was spent primarily in meetings with NEC, RCP, and TTD. As well as discussing their own plans for formative evaluation, CET, RCP, and TTD representatives were present when summative evaluation plans were discussed with NEC representatives. Most of the plans and recommendations in pp. 59-86 were therefore agreed verbally before leaving Thailand, although the draft was written during the following two weeks back in England.

During the four weeks in Thailand I also had meetings with the Director-General of the Department of Non-Formal Education, the Director of the Bureau of Testing Services, the Secretary-General of NEC, the Secretary-General of the Thai National Commission for UNESCO, a representative from the World Bank, and the UNDP (Thailand) Project Officer.

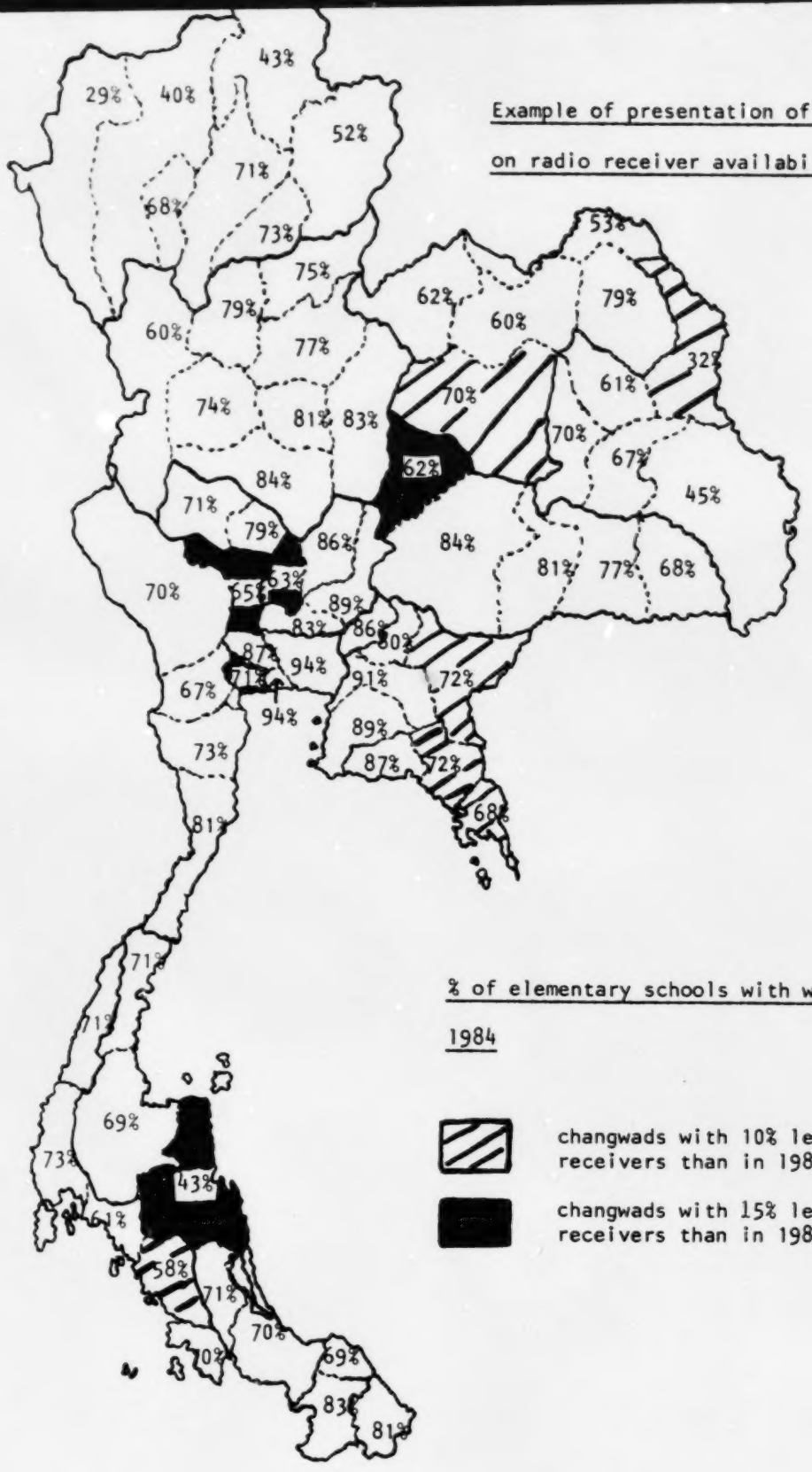
On return to England, I finished drafting the last part of the report (pp. 57 onwards) and made necessary corrections to the early part . Copies of the whole draft report (minus the appendices) were then mailed individually to representatives of CET, RCP, TTD, REC, and UNESCO, for comment. Arrangements were made for these comments to be sent to me in England. The last draft was then finalised by me, and presented to UNESCO and the relevant sectors. The Director of CET formally forwarded a copy of the final document to the World Bank for comment during the second week of December, 1979.

Examples of presentation of ratings for radio programmes



Appendix 3

Example of presentation of information on radio receiver availability



% of elementary schools with working receivers: 1984

changwads with 10% less working receivers than in 1983

changwads with 15% less working receive receivers than in 1983

Appendix 4

PROGRAMME PRODUCTION AND REPETITION IN 1979-1980

Number of producers	Subject/Grade		No. of programmes produced		No. of programmes repeated		Total transmitted	
			1979	1980	1979	1980	1979	1980
2	Music	1	15	16	-	-	15	16
		2	15	16	-	-	15	16
		3	15	16	-	-	15	16
		4	15	16	-	-	15	16
		5	15	16	-	-	15	16
		6	15	16	-	-	15	16
2	Life experience/ Social Studies	1	15	16	-	-	15	16
		2	15	13	-	3	15	16
		3	15	16	-	-	15	16
		4	30	16	-	-	30	16
		5	15	15	-	1	15	16
		6	15	15	-	1	15	16
2	Thai	1	11	16	4	-	15	16
		2	9	16	6	-	15	16
		3	14	12	1	4	15	16
		4	-	16	-	-	-	16
		5	11	12	4	4	15	16
		6	15	12	-	4	15	16
2	English	5	-	2	30	30	30	32
		6	-	2	30	30	30	32
		7	30	2	-	30	30	32
		8	-	32	-	-	-	32
		9	-	-	30	-	30	-
		10	-	2	30	30	30	32
		11	-	2	30	30	30	32
		12	-	2	30	30	30	32
8	Sub-total		285	315	195	197	480	512
4*	Maths (BSPP)	2	-	160	-	-	-	160
12*	TOTAL		285	475	195	197	480	672

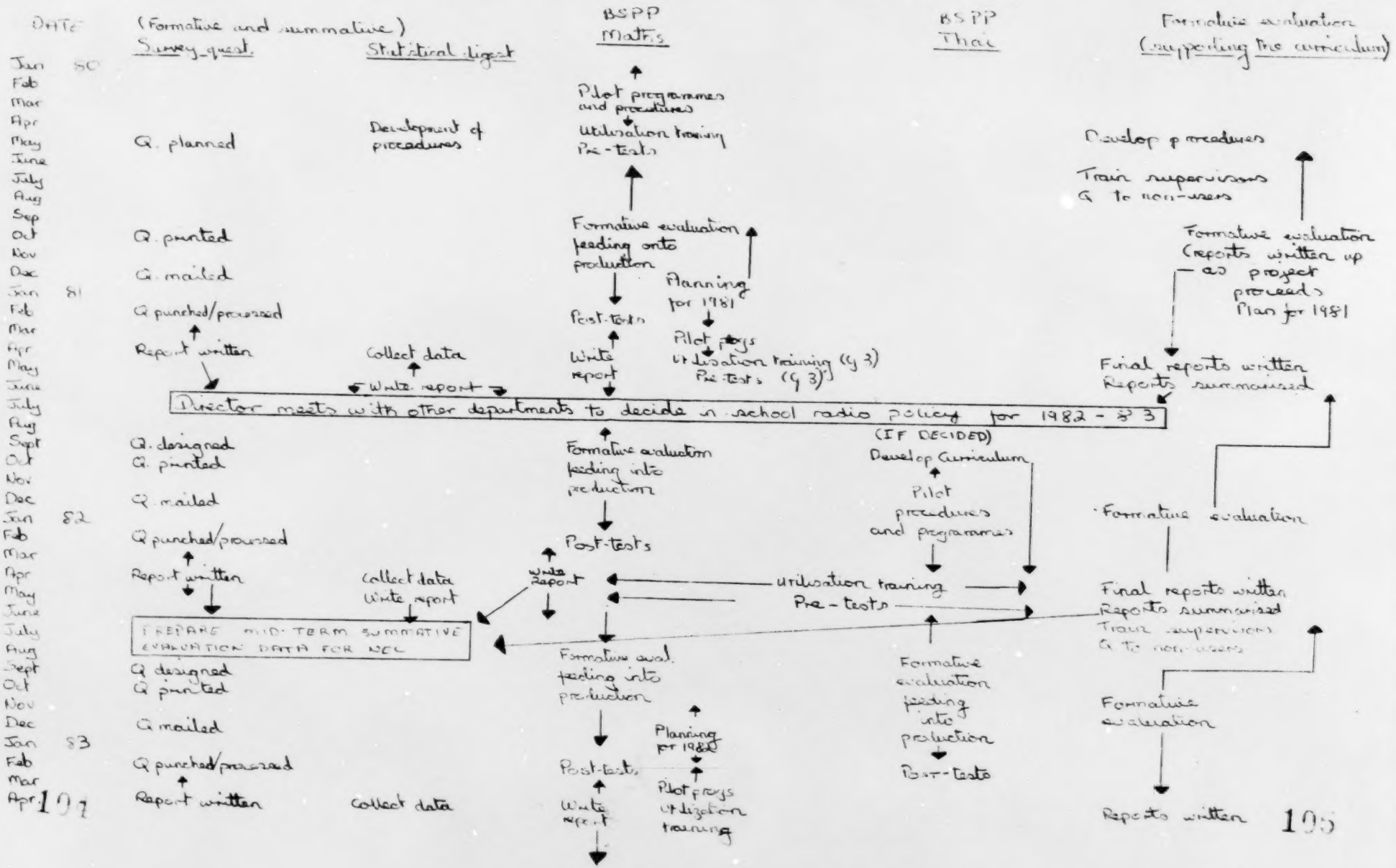
* 1980 only

Average production load: 1979: $\frac{285 \text{ programmes}}{8 \text{ producers}}$ = 35.6 programmes per year per producer

1980: $\frac{475 \text{ programmes}}{12 \text{ producers}}$ = 39.6 programmes per year per producer.

DETAILED EVALUATION WORK-PLAN FOR CET (1980 - 83)

APPENDIX 5



PHASING, JOB DESCRIPTION AND TERMS OF REFERENCE FOR FOREIGN CONSULTANTS

Summary

* unsecured funds (otherwise, from UNDP)

1.	1980	April-June	3 months	CET	Formative evaluation
2.	1980	April-March (1981)	12 months	CET	(Thai) specialist in evaluation
3.	1980	April-June	3 months	NEC	Summative evaluation
4.	1980	April-June	3 months	RCP	Formative evaluation
5.	1981	April-May	2 months	CET	Formative evaluation (1)
6.	1981	May-June	2 months	RCP	Formative evaluation (4)
7.	1981	April-June	3 months	TTD	Formative evaluation*
8.	1981	Aug-April	6 months	CET	Development of BSPP (Thai)*
9.	1982	June	1 month	NEC	Summative evaluation (3)
10.	1985	May-December	8 months	NEC	Summative evaluation (3)

Foreign Total (secured funds)	22 months
Foreign Total (unsecured funds)	9 months
National Total (secured funds)	12 months

Details

1. Consultant in Formative Evaluation (CET)

   Dates: April-June 1978

   Terms of reference.

   a. To assist the Director of CET and CET evaluation staff with the design of the annual school survey including: to help decide

whether to sample or census schools; to help specify the data analysis required and to liaise with the Bureau of Test Services regarding punching and programming; to assist with the lay-out and design of the questionnaire; to advise on the structure of the survey report; to advise on ways on ensuring a high response rate.

b. To develop procedures for the collection of data required for an annual statistical digest of output, expenditure, and operation in CET; to test out the procedures by applying them retrospectively to 1979-80.

c. To assist with the development of procedures for the formative evaluation of programmes for Thai and Life Experience Grade 3, including advice on programme analysis, classroom observation schedules and procedures, teacher interview schedules, and analysis and report writing.

Job Description and Qualifications

The consultant should have experience of organising and carrying out research and evaluation for an educational broadcasting organisation as an on-going activity. As well as having substantial experience in questionnaire design and the analysis and interpretation of large-scale survey data, the consultant should also have practical experience of formative evaluation of educational radio (or television) programmes, and a good understanding of methods of production of educational radio.

The consultant will normally have a background in the social sciences, with a good knowledge of statistics.

Examples of agencies where suitable candidates may be found are: Indian Space Research Organisation, Ahmedabad, India; National Centre for Educational Research and Technology, India; Agency for Instructional Television, Bloomington, Indiana, U.S.A; Children's Television Workshop,

New York, U.S.A; Ontario Educational Communications Authority, Toronto, Canada; Schools Broadcasting Council, London, United Kingdom; Open University, Milton Keynes, United Kingdom; Deutsches Institut für Fernstudien, Tubingen, West Germany; Centre Nationale pour les documentations Pedagogiques, Paris, France. Good working knowledge of English essential.

2. Thai specialist in Evaluation (CET)

Dates: April 198)-March 1981

Terms of reference:

The specialist will assist the Director of CET and CET evaluation staff in setting up an evaluation mechanism for its activities. He/she will elaborate on the basic evaluation design established at an earlier stage and ensure full implementation. His/her activities will include data collection and treatment (surveys and statistical methods) and evaluation based on content analysis and other related techniques. The main thrust of the specialist's activities will be on the formative type of evaluation and feed-back, but his/her assistance will also be required for summative evaluation. An innovative and flexible approach to methodology is essential.

A university degree in social sciences, with specialized knowledge in statistical methods. Experience with media systems is necessary. Good knowledge of English.

Job Description and Qualifications

The specialist should have a good knowledge of the Thai educational system, and experience in educational research and evaluation in schools in Thailand. Some knowledge of radio production methods would be useful. A suitable candidate is likely to have a university degree in social sciences, with specialised knowledge in statistical methods, and evaluation procedures. Good knowledge of English is essential. A suitable candidate is likely to have had work experience in one of the Ministry of Education's Planning and Research Divisions, or in working for the NEC.

3. Consultant in Summative Evaluation (NEC)

Dates: April-June 1980

Terms of reference:

To develop, in conjunction with the National Education Commission, detailed procedures for the mid-term and final summative evaluation of the radio component of the fifth education project, working within the master evaluation framework already agreed.

Job Description and Qualifications

The consultant should have experience of working on the summative evaluation of educational media projects at a national or State level. The consultant should have experience and/or knowledge of cost-effectiveness studies in the field of educational broadcasting, and of the limitations of such an approach.

The consultant will normally have a background in the social sciences, with a good knowledge of statistics and economics. Good knowledge of English is essential.

Examples of agencies where suitable candidates may be found are: Institute for Communications Research, Stanford University, U.S.A.; Open University, Milton Keynes, England; FINEP, Rio de Janeiro, Bazil; Indian Space Research Organisation, Ahmedabad, India; The World Bank, Washington DC, USA; University of Dijon, France.

4. Consultant in Formative Evaluation (RCP)

Dates: April-June, 1980

Terms of reference

a. To assist RCP develop an effective system of feedback, through regional and provincial centres, including the collection of reliable and accurate information on listening figures, learners' and organisers' ratings of the programmes, enrolments and drop-out rates, and suitable times for radio transmissions.

b. To develop procedures for the collection of data required for an annual statistical digest of output, expenditure and operation of the radio component of RCP, in conjunction with CET and NEC.

c. To explore possibilities for the pre-testing and formative evaluation of individual programmes or series.

d. To assist with the development of a workshop on evaluation for RCP central and regional staff.

e. To assist with the development of a training programme on evaluation for regional staff.

Job Description and Qualifications

The consultant should have experience of formative evaluation of educational media projects aimed at non formal education target groups. In particular, the consultant should have experience of organising and interpreting data collected through field workers, and interpreting statistical data, and in procedures based on field experiments and the pre-testing of programme material on sample target audiences.

The consultant will normally have a background in the social sciences, with a good knowledge of statistics and participant observation techniques. Good knowledge of English is essential.

Examples of agencies where suitable condidates may be found are: Indian Space Research Organisation, Ahmedabad, India; National Centre for Educational Technology and Research, Delhi, India; EDPITAF, Manila, Philippines; National Council for Adult Education, London, United Kingdom; International Extension College, Cambridge, United Kingdom; Organisation of American States; Open University, United Kingdom.

5. Consultant in Formative Evaluation (CET)

Dates: April-May, 1981

Terms of reference:

a. To assist CET with the interpretation of data and writing of the report on the annual school survey.

b. To check on the practicality of the formative

evaluation procedures for Thai and Life Experiences programmes - particularly work load - and to suggest amendments if necessary; to assist with analysing and interpreting formative evaluation data (if necessary).

c. To check on any difficulties arising from the collection of data on the annual statistical digest, and to suggest amendments if necessary.

d. To assist NEC, by providing, summarising or collating data required for the mid-term summative evaluation.

Job Description and Qualifications

Same as (1) above - if possible, in order to provide continuity, the same person, or at least someone from the same research team, should be appointed to both concultancies.

6. Consultant in Formative Evaluation (RCP)

Dates: May-June 1981

Terms of reference:

a. To analyse the results and effectiveness of feedback systems devised the previous year and to revise if necessary.

b. To check on any difficulties arising from the collection of data on the annual statistical digest, and to suggest amendments if necessary.

c. To assist NEC, by providing, summarising or collecting data required for the mid-term summative evaluation.

Job Description and Qualifications

Same as (4) above - if possible, in order to provide continuity, the same person, or at least someone from the same research team, should be appointed to both consultancies.

7. Consultant in Formative Evaluation (TTD)

Dates: April-June 1981

Terms of reference:

a. To assist TTD develop procedures, in conjunction with CET, for an annual survey of listeners, including: to decide whether or not to sample schools or teachers, and if so, the basis for the sample; to help specify the data analysis required and to liaise with the Bureau of Test Services regarding punching and programming; to assist with the lay-out and design of questionnaires; to advise on the structure of the survey report, including an analysis of appropriate transmission times for teaching; to advise on ways of ensuring a high response rate, and moderate costs for the survey.

b. To develop procedures for the collection of data required for the annual statistical digest of output, expenditure and operation in TTD radio production.

c. To assist with the development of procedures for the formative evaluation of programmes, including an analysis of the effectiveness of the methods of production proposed for TTD programme production.

Job Description and Qualifications

Same as (1) above - if funds are not available for a consultant specifically for TTD, the consultant in (5) above could also be used to help TTD. However, this should be seen as a poor option to having a consultant working specifically in this area.

8. Consultant for the Development of BSPP (Thai) (IET)

Dates: August 1981 - April 1983 (a total of six man-months spread over this period)

Terms of reference

To assist with the development of direct teaching of Thai by radio, including advice on formative and summative evaluation procedures.

The consultant would have experience of the development of projects where radio has been used for direct teaching, preferably of a mother tongue. The consultant should have experience of using formative evaluation procedures for the development of a new curriculum, and a knowledge of radio production techniques.

The most suitable institution would be IMSSS, at Stanford University.

9. Consultant for Summative Evaluation (NEC)
   Dates: June 1982
   Terms of reference:

To assist NEC to collect, analyse and interpret mid-term evaluation data.

Job Description and Qualifications

Same as (3) above - if possible, in order to provide continuity, the same person, or at least someone from the same research team or department, should be appointed to both consultancies.

10. Consultant for Summative Evaluation (NEC)
    Dates: May-December 1985
    Terms of reference:

To assist NEC in collecting new, and analysing existing, summative evaluation data for the final summative evaluation.

Job Description and Qualifications

Same as (3) above - if possible, in order to provide continuity, the same person, or at least someone from the same research team or department, should be appointed to both consultancies.